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(54) Title: POLYNUCLEOTIDE CAUSING RNA INTERFERE AND METHOD OF REGULATING GENE EXPRESSION WITH THE USE OF THE SAME

(54) 発明の名称: RNA 干渉を生じさせるポリヌクレオチド、および、これを用いた遺伝子発現抑制方法

(57) Abstract: It is intended to provide a polynucleotide which exerts a high RNA interfere effect on a target gene but has little risk of causing RNA interfere on genes not relating to the target gene. From the base sequence of a target gene of RNA interfere, a sequence part following the rules (a) to (d) is detected and, based on the detection results, a polynucleotide causing RNAi is designed, synthesized and so on. (a) The 3'-terminal base is adenine, thymine or uracil. (b) The 5'-terminal base is guanine or cytosine. (c) The 3'-terminal sequence consisting of seven bases is rich in one or more bases selected from the group consisting of adenine, thymine and uracil. (d) The base number is at such a level as causing RNA interfere without expressing cytotoxicity.

(57) 要約: 本発明は、標的遺伝子に対して高い RNA 干渉効果を有するとともに、標的遺伝子と関係のない遺伝子について RNA 干渉を生じる危険性が非常に小さいポリヌクレオチドを提供する。RNA 干渉の標的遺伝子の塩基配列から、下記 (a) から (d) の規則に従う配列部位を検索し、検索結果に基づき RNAi を生じさせるポリヌクレオチドの設計、合成等を行う。(a) 3' 末端の塩基が、アデニン、チミンまたはウラシルである。(b) 5' 末端の塩基が、グアニンまたはシトシンである。(c) 3' 末端の 7 塩基の配列において、アデニン、チミンおよびウラシルからなる群より選ばれる 1 種または 2 種以上の塩基がリッチである。(d) 塩基数が、細胞毒性を生じさせずに RNA 干渉を生じさせ得る数である。

## 明細書

RNA干渉を生じさせるポリヌクレオチド、および、  
これを用いた遺伝子発現抑制方法

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### 技術分野

本発明は、RNA干渉を生じさせるポリヌクレオチドに関する。以下本明細書においてRNA干渉のことを「RNAi」と表記する場合がある。

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### 背景技術

RNA干渉は、機能阻害したい遺伝子の特定領域と相同なセンスRNAとアンチセンスRNAからなる2本鎖RNA (double-stranded RNA、以下「dsRNA」という) が標的遺伝子の転写産物であるmRNAの相同部分を干渉破壊するという現象で、1998年に線虫を用いた実験により初めて  
15 提唱された。しかし、哺乳類においては、約30塩基対以上の長いdsRNAを細胞内へ導入すると、インターフェロンレスポンスが誘導され、細胞がアポトーシスによって死んでしまうため、RNAi法を用いることが困難であった。

一方、マウス初期胚や哺乳類培養細胞では、RNA干渉が起こりえることが示され、RNA干渉の誘導機構そのものは、哺乳類細胞にも存在することがわかってきた。現在では、およそ21~23塩基対の短い2本鎖RNA (short  
20 interfering RNA、siRNA) が、哺乳類細胞系でも細胞毒性を示さずにRNA干渉を誘導できることが示され、哺乳類においてもRNAi法を利用することが可能となってきた。

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### 発明の開示

RNAi法は様々な応用が期待される技術である。しかし、ショウジョウバエや線虫では、ある遺伝子の特定領域と相同なdsRNAおよびsiRNAは、ほとんどの配列でRNA干渉効果を示すのに対して、哺乳類では無作為に選択した(21塩基の)siRNAの70~80%はRNA干渉効果を示さない。これは、





哺乳類においてRNAi法を用いた遺伝子機能解析を行う際に大きな問題点となっている。

また、従来siRNAを設計するにあたっては、試験者等の経験やセンスに依存する部分が大きく、実際にRNA干渉効果を示すsiRNAを高い確率で設計  
5 することが困難であった。さらに、RNA合成は、費用、時間等を要することから、RNA干渉を行うために無駄なsiRNAを合成してしまうことは、RNA干渉のさらなる研究や、RNA干渉を利用した数々の利用法の普及を妨げる要因となっていた。

本発明は、上記問題の解決のために、siRNAとして有効に機能しうるポリ  
10 ヌクレオチド、その設計方法、当該ポリヌクレオチドを用いた遺伝子発現抑制方法、当該ポリヌクレオチドを含む医薬組成物、遺伝子発現抑制組成物を提供することを目的とする。

#### 図面の簡単な説明

15 図1は、ヒトとマウスとで共通配列であるsiRNAの設計を示す図である。

図2は、RNAi効果を示すsiRNAの規則性を示す図である。

図3は、ヒトFBP1およびマウスFbp1の塩基配列中の規定配列を有する  
共通部位（太字部分）を示す図である。

図4は、ヒトFBP1およびマウスFbp1に共通の規定配列を列挙した図で  
20 ある。

図5は、ヒトFBP1およびマウスFbp1に共通の規定配列にスコアを付した図である。

図6は、標的以外の遺伝子をロックアウトしないよう、規定配列のうちの1つ  
をBLAST検索した結果を示す図である。

25 図7は、標的以外の遺伝子をロックアウトしないよう、規定配列のうちの1つ  
をBLAST検索した結果を示す図である。

図8は、プログラムの出力結果を示す図である。

図9は、RNA断片の設計（a～p）を示す図である。

図10は、a～pのsiRNAがRNAi効果を示すか試験した結果を示す図

である。「B」はショウジョウバエ培養細胞における結果を、「C」はヒト培養細胞における結果を示す図である。

図11は、a～pのsiRNAの配列の特徴を分析した結果を示す図である。

図12は、本発明の基本原理を示す原理構成図である。

- 5 図13は、本発明が適用される本システムの塩基配列処理装置100の構成の一例を示すブロック図である。

図14は、標的遺伝子塩基配列ファイル106aに格納される情報の一例を示す図である。

- 10 図15は、部分塩基配列ファイル106bに格納される情報の一例を示す図である。

図16は、判定結果ファイル106cに格納される情報の一例を示す図である。

図17は、規定配列ファイル106dに格納される情報の一例を示す図である。

図18は、参照配列データベース106eに格納される情報の一例を示す図である。

- 15 図19は、同一類似度ファイル106fに格納される情報の一例を示す図である。

図20は、評価結果ファイル106gに格納される情報の一例を示す図である。

図21は、本発明が適用される本システムの部分塩基配列作成部102aの構成の一例を示すブロック図である。

- 20 図22は、本発明が適用される本システムの無関係遺伝子標的評価部102hの構成の一例を示すブロック図である。

図23は、本実施形態における本システムのメイン処理の一例を示すフローチャートである。

- 25 図24は、本実施形態における本システムの無関係遺伝子標的評価処理の一例を示すフローチャートである。

図25は、標的発現ベクターpTRE Cの構造を示す図である。

図26は、実施例2の2.(2)におけるプライマーの一方がイントロンを挟む形でデザインされていない場合のPCRの結果を示す図である。

図27は、実施例2の2.(2)におけるプライマーの一方がイントロンを挟む

形でデザインされている場合のPCRの結果を示す図である。

図28は、siRNA;siVIM35の配列および構造を示す図である。

図29は、siRNA;siVIM812の配列および構造を示す図である。

図30は、siRNA;siControlの配列および構造を示す図である。

- 5 図31は、siVIM812およびsiVIM35のRNAi活性をアッセイした結果を示す図である。

図32は、siControl、siVIM812およびsiVIM35のピメンチンに対するRNAi活性を示す図である。

図33は、抗体染色の結果を示す図である。

- 10 図34は、プログラムにより設計されたsiRNAのルシフェラーゼ遺伝子に対するRNAi活性の測定結果を示す図である。

図35は、プログラムにより設計されたsiRNAのSARSウイルスが有する配列に対するRNAi活性の測定結果を示す図である。

- 15 図36は、プログラムにより設計されたsiRNAとのミスマッチ数が小さい配列を含む他の遺伝子に対するRNAi活性の測定結果を示す図である。

図37は、アポトーシスに関与している遺伝子と遺伝子オントロジーにおけるGO\_IDとの関係を示す図である。

図38は、ホスファターゼおよびホスファターゼ活性に関与している遺伝子と遺伝子オントロジーにおけるGO\_IDとの関係を示す図である。

- 20 図39は、細胞周期に関与している遺伝子と遺伝子オントロジーにおけるGO\_IDとの関係を示す図である。

図40は、レセプターに関与している遺伝子と遺伝子オントロジーにおけるGO\_IDとの関係を示す図である。

- 25 図41は、イオンチャンネルをコードしている遺伝子と遺伝子オントロジーにおけるGO\_IDとの関係を示す図である。

図42は、シグナル伝達系に関与している遺伝子と遺伝子オントロジーにおけるGO\_ID（との関係を示す図である。

図43は、キナーゼおよびキナーゼ活性に関与している遺伝子と遺伝子オントロジーにおけるGO\_IDの関係を示す図である。

図 4 4 は、転写制御に関与している遺伝子と遺伝子オントロジーにおける GO \_\_ I D との関係を示す図である。

図 4 5 は、G タンパク質共役レセプター (GPCR) および GPCR に関与している遺伝子と遺伝子オントロジーにおける GO \_\_ I D との関係を示す図である。

図 4 6 は、本発明のポリヌクレオチドの標的となる標的配列、遺伝子、生物学的機能カテゴリー、文献情報に基づく生物学的機能、関連する疾患の関係を示す図である。

図 4 6 の「遺伝子名」および「refseq\_N0.」は、NCBI の「RefSeq」  
(HYPERLINK"http://www.ncbi.nlm.nih.gov/" http://www.ncbi.nlm.nih.gov/) に対応するものであり、RefSeq にアクセスすることによって、各遺伝子の情報(遺伝子の配列、機能等)を取得することができる。

図 4 6 中の「標的配列」の欄に記載された配列において、実際に RNA i の標的となる配列は 5' 末端から 3 番目の塩基から 3' 末端から 3 番目までの塩基である。即ち、図 4 6 中の「標的配列」の配列では、5' 末端および 3' 末端に 2 塩基ずつ RNA i の標的となる配列に隣接する配列が記載されている。本願明細書及び請求の範囲中、狭義の「規定配列」とは、実際に RNA i の標的となる配列を意味し、例えば、図 4 6 中の「標的配列」の 5' 末端から 3 番目の塩基から 3' 末端から 3 番目までの塩基に相当する。ただし便宜のため、本願明細書及び請求の範囲中、「規定配列」「標的配列」はともに、文意により、狭義の「規定配列」と同義、或いは、図 4 6 中の「標的配列」と同様に、狭義の「規定配列」に 5' 末端および 3' 末端に 2 塩基ずつ RNA i の標的となる配列に隣接する配列が付加された配列、の双方の意味で使用される。

本明細書および請求の範囲の記載において、特に明示しない限り、「5' 末端の塩基」とは図 4 6 中の「標的配列」に記載の配列の 5' 末端から 3 番目の塩基、そして、「3' 末端の塩基」とは図 4 6 中の「標的配列」に記載の配列の 3' 末端から 3 番目の塩基を意味する。よって、図 4 6 中の「標的位置」とは、図 4 6 中の「標的配列」の欄に記載した各配列の 5' 末端から 3 番目の塩基(例えば、整理番号 1 の標的配列では「g」)の、各遺伝子の配列中での相当する位置を意味す

る。

図46中の「配列番号（ヒト）」および「配列番号（マウス）」は本明細書に添付の配列表中の各標的配列が記載されている配列番号を意味し、同一の整理番号における標的配列はヒトとマウスで同一である。

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#### 発明の詳細な説明

本発明者らは、上記課題を解決するために、RNAi法を用いる際最も労力、時間、費用を要する部分の1つである、siRNAの入手を容易に行う手法について検討を進めた。siRNAの調製は哺乳類において特に問題となっていることから、本発明者らは哺乳類培養細胞系を用いて、RNA干渉に有効なsiRNAの配列規則性を同定することを試みたところ、有効なsiRNAの配列には所定の規則性があることを見だし、本発明を完成するに至った。すなわち、本発明は、次の通りである。

〔1〕 目的生物の遺伝子の中から選ばれる標的遺伝子について、RNA干渉を生じさせるポリヌクレオチドであって、

少なくとも2本鎖領域を有し、

前記2本鎖領域における一方の鎖が、標的遺伝子の塩基配列中に含まれる、下記（a）から（d）の規則：

（a）3'末端の塩基が、アデニン、チミンまたはウラシルであり；

20 （b）5'末端の塩基が、グアニンまたはシトシンであり；

（c）3'末端の7塩基の配列において、アデニン、チミンおよびウラシルからなる群より選ばれる1種または2種以上の塩基がリッチであり；

（d）塩基数が、細胞毒性を生じさせずにRNA干渉を生じさせ得る数であるに従う規定配列と相同な塩基配列からなり、そして

25 前記2本鎖領域における他方の鎖が、前記規定配列と相同な塩基配列と相補的な配列を有する塩基配列からなる

ことを特徴とするポリヌクレオチド。

〔2〕 前記規定配列と相同な塩基配列の少なくとも80%以上の塩基が、前記規定配列の塩基配列と一致することを特徴とする〔1〕に記載のポリヌクレオ

チド。

〔３〕 前記規則（ｃ）において、７塩基のうち少なくとも３塩基以上がアデニン、チミンおよびウラシルからなる群より選ばれる１種または２種以上であることを特徴とする〔１〕または〔２〕に記載のポリヌクレオチド。

５ 〔４〕 前記規則（ｄ）において、塩基数が１３～２８であることを特徴とする〔１〕～〔３〕のいずれか一項に記載のポリヌクレオチド。

〔５〕 前記規定配列が、さらに下記（ｅ）の規則：

（ｅ）１０塩基以上グアニンまたはシトシンが連続する配列を含まない

に従う配列であることを特徴とする請求項１～４のいずれか一項に記載のポリヌクレオチド。

〔６〕 前記規定配列が、さらに下記（ｆ）の規則：

（ｆ）目的生物の全遺伝子配列のうち、標的遺伝子以外の他の遺伝子の塩基配列中に、当該規定配列と９０％以上の相同性を有する配列が含まれないに従う配列であることを特徴とする〔５〕に記載のポリヌクレオチド。

１５ 〔７〕 前記規定配列が、配列表配列番号４７～配列番号８１７０８１のいずれかに記載の塩基配列からなることを特徴とする〔６〕に記載のポリヌクレオチド。

〔８〕 前記規定配列が、図４６の標的配列の欄に記載された配列であることを特徴とする〔６〕に記載のポリヌクレオチド。

２０ 〔９〕 配列番号８１７１０２ないし８１７６５１のいずれかの塩基配列を有することを特徴とする〔６〕に記載のポリヌクレオチド。

〔１０〕 ２本鎖ポリヌクレオチドであることを特徴とする〔１〕～〔９〕のいずれか一項に記載のポリヌクレオチド。

〔１１〕 前記２本鎖ポリヌクレオチドの一方の鎖が、前記規定配列と相同な塩基配列の３'末端にオーバーハング部を有する塩基配列からなり、前記２本鎖ポリヌクレオチドの他方の鎖が、前記規定配列と相同な塩基配列と相補的な配列の３'末端にオーバーハング部を有する塩基配列からなることを特徴とする〔１０〕に記載のポリヌクレオチド。

〔１２〕 ヘアピン構造を有する１本鎖ポリヌクレオチドであり、前記２本

鎖領域における一方の鎖の3'末端と、前記2本鎖領域における他方の鎖の5'末端とを連結するループ部を有することを特徴とする〔1〕～〔9〕のいずれか一項に記載のポリヌクレオチド。

〔13〕 発現を抑制しようとする標的遺伝子の発現系に導入するポリヌクレオチドの選択方法であって、

少なくとも2本鎖領域を有し、

前記2本鎖領域における一方の鎖が、標的遺伝子の塩基配列中に含まれる、下記（a）から（f）の規則：

（a）3'末端の塩基が、アデニン、チミンまたはウラシルであり；

10 （b）5'末端の塩基が、グアニンまたはシトシンであり；

（c）3'末端の7塩基の配列において、アデニン、チミンおよびウラシルからなる群より選ばれる1種または2種以上の塩基がリッチであり；

（d）塩基数が、細胞毒性を生じさせずにRNA干渉を生じさせ得る数であり、；

（e）10塩基以上グアニンまたはシトシンが連続する配列を含まず；

15 （f）目的生物の全遺伝子配列のうち、標的遺伝子以外の他の遺伝子の塩基配列中に、当該規定配列と90%以上の相同性を有する配列が含まれないに従う規定配列と相同な塩基配列からなり、そして、

前記2本鎖領域における他方の鎖が、前記規定配列と相同な塩基配列と相補的な配列を有する塩基配列からなるポリヌクレオチドを選択することを特徴とする  
20 ポリヌクレオチドの選択方法。

〔14〕 前記選択したポリヌクレオチドから、さらに、前記標的遺伝子の規定配列と相同な塩基配列が、前記標的遺伝子以外の他の遺伝子の塩基配列とのミスマッチ数が少なくとも3塩基であり、かつ、当該少なくとも3塩基のミスマッチを有する塩基配列を有する他の遺伝子の数が最も少ない配列であるポリヌクレオチドを選択することを特徴とする〔13〕に記載のポリヌクレオチドの選択方法。  
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〔15〕 〔1〕～〔12〕のいずれか一項に記載のポリヌクレオチドを、発現を抑制しようとする標的遺伝子の発現系に導入して標的遺伝子の発現を抑制することを特徴とする遺伝子発現抑制方法。



〔16〕 〔13〕または〔14〕に記載の方法により選択されたポリヌクレオチドを、発現を抑制しようとする標的遺伝子の発現系に導入して標的遺伝子の発現を抑制することを特徴とする遺伝子発現抑制方法。

〔17〕 50%以下に発現を抑制することを特徴とする〔15〕または〔16〕に記載の遺伝子発現抑制方法。

〔18〕 医薬的に有効な量の、〔1〕～〔12〕のいずれか一項に記載のポリヌクレオチドを含む、医薬用組成物。

〔19〕 図46の関連疾患名の欄に記載の疾患を治療または予防するための、〔18〕に記載の医薬用組成物。

〔20〕 図46の遺伝子名の欄に記載された遺伝子に関連する疾患を治療または予防するための、〔18〕に記載の医薬用組成物。

〔21〕 以下1)～9)のいずれかに属する遺伝子が関与する疾患を治療または予防するための、〔18〕に記載の医薬組成物

- 1) アポトーシスに関与している遺伝子；
- 2) ホスファターゼおよびホスファターゼ活性に関与している遺伝子；
- 3) 細胞周期に関与している遺伝子；
- 4) レセプターに関与している遺伝子；
- 5) イオンチャネルに関与している遺伝子；
- 6) シグナル伝達系に関与している遺伝子；
- 7) キナーゼおよびキナーゼ活性に関与している遺伝子；
- 8) 転写制御に関与している遺伝子；あるいは
- 9) Gタンパク質共役レセプターまたはGタンパク質共役レセプターに関与している遺伝子。

〔22〕 図46の配列番号（ヒト）または配列番号（マウス）の欄に記載の配列番号のいずれかの塩基配列を標的配列とするポリヌクレオチドを含む、〔18〕～〔21〕のいずれか一項に記載の医薬組成物。

〔23〕 表1の遺伝子名の欄に記載された遺伝子に関連する疾患を治療または予防するための、〔18〕に記載の医薬用組成物。

〔24〕 膀胱癌、乳癌、結腸直腸癌、胃癌、肝細胞癌、肺癌、黒色腫、卵巣

癌、膀胱癌、前立腺癌、口腔癌、皮膚癌、並びに甲状腺癌から選択される、いずれかの癌を治療または予防するための、〔18〕または〔23〕に記載の医薬組成物。

〔25〕 配列番号817102ないし817651のいずれかの塩基配列を有するポリヌクレオチドを含む、〔18〕、〔23〕または〔24〕のいずれか一項  
5 に記載の医薬組成物。

〔26〕 〔1〕～〔12〕のいずれか一項に記載のポリヌクレオチドを含む、標的遺伝子の発現を抑制するための遺伝子発現抑制用組成物。

〔27〕 標的遺伝子が、図46の関連疾患名の欄に記載の疾患のいずれかの疾患に関連する、〔26〕に記載の遺伝子発現抑制用組成物。

10 〔28〕 標的遺伝子が、図46の遺伝子名の欄に記載された遺伝子のいずれかである、〔26〕に記載の遺伝子発現抑制用組成物。

〔29〕 標的遺伝子が、以下1)～9)のいずれかに属する遺伝子である、〔26〕に記載の遺伝子発現抑制用組成物

- 1) アポトーシスに関与している遺伝子；
- 15 2) ホスファターゼおよびホスファターゼ活性に関与している遺伝子；
- 3) 細胞周期に関与している遺伝子；
- 4) レセプターに関与している遺伝子；
- 5) イオンチャネルに関与している遺伝子；
- 6) シグナル伝達系に関与している遺伝子；
- 20 7) キナーゼおよびキナーゼ活性に関与している遺伝子；
- 8) 転写制御に関与している遺伝子；あるいは
- 9) Gタンパク質共役レセプターまたはGタンパク質共役レセプターに関与している遺伝子。

〔30〕 標的遺伝子が、表1の遺伝子名の欄に記載された遺伝子のいずれか  
25 である、〔26〕に記載の遺伝子発現抑制用組成物。

〔31〕 標的遺伝子が、膀胱癌、乳癌、結腸直腸癌、胃癌、肝細胞癌、肺癌、黒色腫、卵巣癌、膀胱癌、前立腺癌、口腔癌、皮膚癌並びに甲状腺癌から選択される、いずれかの癌に関連する遺伝子である、〔26〕に記載の遺伝子発現抑制用組成物。

〔３２〕 医薬的に有効な量の、〔１〕～〔１２〕のいずれか一項に記載のポリヌクレオチドを投与することを含む、図４６の関連疾患名の欄に記載の疾患を治療または予防するための方法。

#### 発明の効果

- ５ 本発明のポリヌクレオチドは、標的遺伝子に対して高いRNA干渉効果を有するとともに、標的遺伝子と関係のない遺伝子についてRNA干渉を生じる危険性が非常に小さいため、発現を抑制しようとする標的遺伝子だけに特異的にRNA干渉を生じさせることができる。したがって、本発明のポリヌクレオチドは、RNA干渉を利用する試験、治療方法等に好適に利用することができ、哺乳類などの
- 10 の高等動物、特にヒトを対象とするRNA干渉を行う際に特に有効性を発揮するものである。

#### 発明を実施するための態様

本発明の実施の形態を、以下の＜１＞から＜７＞の順に従って説明する。

- 15 ＜１＞RNA干渉の標的塩基配列検索方法  
 ＜２＞RNA干渉を生じさせるポリヌクレオチドの塩基配列設計方法  
 ＜３＞ポリヌクレオチドの作製方法  
 ＜４＞遺伝子の発現抑制方法  
 ＜５＞siRNA配列設計プログラム  
 20 ＜６＞siRNA配列設計ビジネスモデルシステム  
 ＜７＞siRNA配列設計プログラムを実行する塩基配列処理装置等  
 ＜８＞医薬用組成物  
 ＜９＞遺伝子発現抑制用組成物  
 ＜１０＞治療または予防方法

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#### ＜１＞RNA干渉の標的塩基配列検索方法

本発明の検索方法は、目的生物の遺伝子の中から選ばれる標的遺伝子の塩基配列の中から、RNA干渉の起因となる塩基配列を探し出す方法である。RNA干渉を生じさせる対象となる目的生物は、特に限定されず、大腸菌をはじめとする原

核生物、酵母、真菌等の微生物、哺乳類をはじめとする動物、昆虫、植物等のいずれでも良い。

具体的には、本発明の検索方法では、RNA干渉の標的遺伝子の塩基配列から、下記（a）から（d）の規則に従う配列部位を検索する。

- 5       （a）3'末端の塩基が、アデニン、チミンまたはウラシルである。  
      （b）5'末端の塩基が、グアニンまたはシトシンである。  
      （c）3'末端の7塩基の配列において、アデニン、チミンおよびウラシルからなる群より選ばれる1種または2種以上の塩基がリッチである。  
      （d）塩基数が、細胞毒性を生じさせずにRNA干渉を生じさせ得る数である。
- 10       「標的遺伝子」における「遺伝子」とは、遺伝情報をコードする媒体のことという。「遺伝子」はDNA、RNA、DNAおよびRNAの複合体など遺伝情報をコードする物質により構成されるが、遺伝情報としては物質そのものではなく塩基配列を電子データ化したものをコンピュータ上で扱うことが可能である。
- 15       「標的遺伝子」は、1つのコード領域としてもよいし、複数のコード領域に渡り標的としてもよいし、また、配列が判明したすべてのポリヌクレオチドを標的としてもよい。特定の機能を有する遺伝子について検索したい場合には、その特定遺伝子のみを標的とすることにより、当該特定遺伝子に特異的にRNA干渉を生じさせる塩基配列を効率よく検索することができる。すなわち、RNA干渉はmRNAを干渉破壊する現象として知られており、特定のコード領域を選択することにより検索負荷を軽減できる。また、転写領域のひとまとまりを標的遺伝子として検索してもよい。なお、本明細書において塩基配列は特に断らない限りセンス鎖、すなわち、mRNAの配列を基準として示す。また、本明細書中では上記
- 20       （a）から（d）の規則を満たす塩基配列のことを「規定配列」という。上記規則においては、塩基配列がDNAの配列であればチミンが、RNAの配列であればウラシルが対応する。
- 25       規則（c）は、3'末端近傍の配列にアデニン、チミン、およびウラシルからなる群より選ばれる塩基がリッチに含まれていることを規定しており、具体的に検索を行う際の一指標として3'末端部から7塩基の範囲内において、アデニン、チミン、およびウラシルから選ばれる塩基がリッチな配列であることを規定してい

る。

規則(c)において、「リッチな配列」とは特定の塩基が現れる頻度が高いことを意味し、割合を概略的に示すと、規定配列における3'末端側の5～10塩基、好ましくは7塩基の配列中にアデニン、チミンおよびウラシルからなる群より選  
5 ばれる1種または2種以上が、少なくとも40%以上、より好ましくは50%以上含まれることを意味する。より具体的には、例えば約19塩基程度の規定配列の場合を例に挙げると、3'末端側の7塩基のうち好ましくは少なくとも3塩基以上、より好ましくは4塩基以上、特に好ましくは5塩基以上が、アデニン、チミンおよびウラシルからなる群より選ばれる1種または2種以上である。

- 10 規則(c)に該当するか否かを確認する手段は特に制限はなく、7塩基中の好ましくは3塩基以上、より好ましくは4塩基以上、特に好ましくは5塩基以上がアデニン、チミンまたはウラシルであることを確認できればよい。例えば、アデニン、チミンおよびウラシルからなる群より選ばれる1種または2種以上が、3'末端側の7塩基の配列中に3つ以上含まれることをリッチであると定義した場合  
15 を例として説明すると、3'末端の第1番目の塩基から逐次上記3種の塩基のいずれかであるか照合し、第7番目の塩基に至るまでに3つ現れた場合に、規則(c)に適合すると判断することができる。例えば、第3番目までに3つ現れれば、3つの塩基を調べれば足りる。すなわち、規則(c)について検索する場合、必ずしも3'末端側の7塩基についてすべて照合することは要しない。逆に第7番目ま  
20 でに3つ以上現れなければリッチではなく、規則(c)を満たさないと判断される。

- 二本鎖ポリヌクレオチドにおいてはアデニンとチミンまたはウラシルとが相補的に水素結合することは周知である。また、グアニンとシトシンとの相補的な水素結合(G-C水素結合)においては3つの水素結合部位が形成されるのに対し、  
25 アデニンとチミンまたはウラシルとの相補的水素結合(A-(T/U)水素結合)においては2つの水素結合部位からなり、一般的に言ってG-C水素結合に対し、A-(T/U)水素結合のほうが結合力は弱い。

規則(d)においては、検索する塩基配列の塩基数を規定している。検索する塩基配列の塩基数は、RNA干渉を生じさせ得る塩基数である。また、生物の種

類などの条件により、塩基数があまりに大きすぎる s i R N A では細胞毒性を生じてしまうことが知られている。塩基数の上限は、R N A 干渉を生じさせようとする生物の種類などにより異なるが、s i R N A を構成する一本鎖の塩基数はいずれの種にせよ 30 以下であることが好ましい。また、哺乳動物の塩基数にあっては、好ましくは 24 以下、より好ましくは 22 以下である。また、下限は R N A 干渉を生じさせる限りにおいて特に制限されるものではないが、好ましくは 15 以上、より好ましくは 18 以上、さらに好ましくは 20 以上である。s i R N A を構成する一本鎖としての塩基数は、21 で検索することが特に好ましい。

5      なお、下記にても説明するが、s i R N A には、規定配列の 3' 末端にオーバーハング部が設けられる。オーバーハング部は塩基数 2 であることが好適である。したがって、オーバーハング部を含めず、規定配列のみの塩基数の上限としては、好ましくは 28 以下、より好ましくは 22 以下、さらに好ましくは 20 以下であり、下限としては、好ましくは 13 以上、より好ましくは 16 以上、さらに好ましくは 18 以上である。規定配列の最も好ましい塩基数は 19 である。R N A i  
10      の標的塩基配列の検索は、オーバーハング部を含める場合および含めない場合のいずれで検索してもよい。

規定配列に従う塩基配列は、R N A 干渉を生じさせる確率が極めて高い。したがって、本発明の検索方法により、R N A 干渉を生じさせる配列を極めて高い確率で検索することが可能であり、R N A 干渉を生じさせるポリヌクレオチドの設計を簡便化することができる。

20      また、他の好ましい例として、規定配列が、さらに下記の規則 (e) に従う配列であることが挙げられる。(e) 10 塩基以上グアニンまたはシトシンが連続する配列を含まない。

規則 (e) においては、検索する塩基配列が、10 塩基以上グアニン (G) および/またはシトシン (C) が連続した配列を含まない配列であることを規定している。10 塩基以上グアニンおよび/またはシトシンが連続するというのは、例えば、グアニンまたはシトシンの一方のみが連続する場合と、グアニンおよびシトシンとが混在する配列となっている場合の双方を含み、より具体的には、G G G G G G G G G G、C C C C C C C C C C のほか、G および C の混合配列であ

る G C G G C C C G C G など含まれる。

また、標的遺伝子と関係のない遺伝子についてまで RNA 干渉を生じさせないようにするためには、設計した配列と同一または類似の配列が他の遺伝子に含まれていないか検索することが好ましい。設計した配列と同一または類似の配列の

- 5 検索は、一般的なホモロジー検索を行うことができるソフトウェア等を用いて行えばよい。この際、s i RNA の 2 本の鎖（センス鎖およびアンチセンス鎖）による RNA i 効果を考慮して、「設計した配列」および「設計した配列と相補的な塩基配列を有する配列（相補配列）」の両方について、同一または類似の配列が他の
- 10 設計した配列またはその相補配列と同一／類似配列を有する配列を除外することにより、標的とする遺伝子のみに特異的に RNA 干渉を生じさせる配列を設計することができる。

- したがって、設計した配列のうち、他の遺伝子に塩基配列のミスマッチ数が小さい類似配列が存在するような配列を除外することにより、特異性の高い配列を
- 15 選別することができる。例えば、塩基数 19 の塩基配列を設計する場合、他の遺伝子にミスマッチが 2 塩基以下の類似配列が存在する配列は、除外することが好ましい。ここで類似性判断の閾値となるミスマッチ数の値を大きく設定するほど、設計する配列の特異性が高まる。塩基数 19 の塩基配列を設計する場合、より好ましくは、他の遺伝子にミスマッチが 3 塩基以下の類似配列が存在する配列を除
- 20 外することが好ましく、さらに好ましくは、他の遺伝子にミスマッチが 4 塩基以下の類似配列が存在する配列を除外することが好ましい。また、当該規定配列を有する配列およびその相補配列の両方について、塩基配列のミスマッチ数が小さい類似配列が他の遺伝子に存在するような配列を除外することにより、より特異性の高い配列を設計することができるため、好ましい。

- 25 配列の類似性を判断する基準となるミスマッチ数は、設計する配列の塩基数によっても異なるため、一概に規定することは難しい。塩基配列のミスマッチ数を相同性で規定することとすると、下記の規則（f）に従う配列であるか検索すればよい。（f）目的生物の全遺伝子配列のうち、標的遺伝子以外の他の遺伝子の塩基配列中に、当該規定配列を有する配列と 90 % 以上の相同性を有する配列が含

まれない。

規則（f）において、標的遺伝子以外の他の遺伝子の塩基配列中に、規定配列と85%以上の相同性を有する配列が含まれないことが好ましく、規定配列と80%以上の相同性を有する配列が含まれないことがより好ましく、規定配列と75%以上の相同性を有する配列が含まれないことが好ましい。また、ここで、当該規定配列を有する配列およびその相補配列の両方について、塩基配列の相同性が高い類似配列が他の遺伝子に存在するような配列を除外することにより、より特異性の高い配列を設計することができるため、好ましい。

なお、規定配列の検索は、塩基数を定めた上で上記の（a）から（c）の規則などに従う部分を検索するようなプログラムを搭載するコンピュータを用いて効率的に検出可能である。より具体的な実施の形態は下記<5> siRNA配列設計プログラム、および、<7> siRNA配列設計プログラムを実行する塩基配列処理装置等の欄に示す。

本願の配列表配列番号47～817081に記載のポリヌクレオチドは、上記（a）－（f）の規則を満たす規定配列（を含む標的配列）として、選択されたヒト及びマウスの配列である。

#### <2> RNA干渉を生じさせるポリヌクレオチドの塩基配列設計方法

本発明の塩基配列設計方法は、上記の検索方法により検索された塩基配列に基づいてRNA干渉を生じさせるポリヌクレオチドの塩基配列を設計するものである。RNA干渉を生じさせるポリヌクレオチドは、上記の検索方法により検索された規定配列に基づいて設計された2本鎖領域を有するポリヌクレオチドであり、標的遺伝子について、RNA干渉を生じさせることができるものであれば、特に限定されない。

RNA干渉を生じさせるポリヌクレオチドとしては、主として、siRNA等の2本鎖ポリヌクレオチド型と、ヘアピン構造を有するRNA（short hairpin RNA：shRNA）等の1本鎖ポリヌクレオチド型に分類することができる。

siRNAやshRNAは、主としてRNAからなるが、一部にDNAが含まれている混成ポリヌクレオチドも含まれる。本発明の塩基配列設計方法では、上



記 (a) から (d) の規則に従う塩基配列を標的遺伝子の塩基配列から検索し、検索された塩基配列と相同な塩基配列を設計する。また、他の好ましい設計例としては、上記 (e) および (f) の規則などを考慮してもよい。(a) から (d) の規則および検索の手法などについては、上記本発明の検索方法について説明したとおりである。

RNA干渉を生じさせるポリヌクレオチドにおける2本鎖領域は、一方の鎖が、標的遺伝子の塩基配列中に含まれる、上記 (a) から (d) の規則に従う規定配列と相同な塩基配列からなり、他方の鎖が、前記規定配列と相同な塩基配列と相補的な配列を有する塩基配列からなる。「相同な配列」とは、同一の配列および当該RNA干渉を生じさせるという機能を失わない範囲で同一配列に対し欠失、置換、挿入などの変異を含む配列のことをいう。標的遺伝子の種類、配列などの条件にもよるが、許容される変異を相同性 (ホモロジー) で例示すると、好ましくは80%以上、より好ましくは90%以上、さらに好ましくは95%以上である。許容される変異の程度としての相同性を算出する場合、同一の検索アルゴリズムを用いて算出された数値どうしを比較することが望ましい。検索アルゴリズムは特に限定されないが、局所的な配列の検索に適したものが好適であり、より具体的にはBLAST、searchなどを好適に用いることができる。

より詳細には、核酸 (ポリヌクレオチド) の同一性パーセントは、視覚的検査および数学的計算によって決定することが可能である。あるいは、2つの核酸配列のパーセント同一性は、目視検査と数学的計算により決定可能であるか、またはより好ましくは、この比較はコンピュータ・プログラムを使用して配列情報を比較することによってなされる。代表的な、好ましいコンピュータ・プログラムは、遺伝学コンピュータ・グループ (GCG; ウィスコンシン州マジソン) のウィスコンシン・パッケージ、バージョン10.0プログラム「GAP」である (Devereuxら、1984、Nucl. Acids Res. 12:387)。この「GAP」プログラムの使用により、2つの核酸配列の比較の他に、2つのアミノ酸配列の比較、核酸配列とアミノ酸配列との比較を行うことができる。ここで、「GAP」プログラムの好ましいデフォルトパラメーターには:(1)ヌクレオチドについての (同一物について1、および非同一物について0の値を含む)

一元 (unary) 比較マトリックスの GCG 実行と、Schwartz および Dayhoff 監修「ポリペプチドの配列および構造のアトラス (Atlas of Polypeptide Sequence および Structure)」国立バイオ医学研究財団、353-358 頁、1979 により記載されるような、

5 Gribnikov および Burgess, Nucl. Acids Res. 14: 6745, 1986 の加重アミノ酸比較マトリックス; または他の比較可能な比較マトリックス; (2) アミノ酸の各ギャップについて 30 のペナルティと各ギャップ中の各記号について追加の 1 のペナルティ; またはヌクレオチド配列の各ギャップについて 50 のペナルティと各ギャップ中の各記号について追加の 3 のペナルティ; (3) エンドギャップへのノーペナルティ; および (4) 長いギャップへは最大ペナルティなし、が含まれる。当業者により使用される他の配列比較プログラムでは、例えば、国立医学ライブラリーのウェブサイト: <http://www.ncbi.nlm.nih.gov/blast/bl2seq/bls.html> により使用が利用可能な BLASTN プログラム、バージョン 2.

10 2.7、または UW-BLAST 2.0 アルゴリズムが使用可能である。UW-BLAST 2.0 についての標準的なデフォルトパラメーターの設定は、以下のインターネットサイト: <http://blast.wustl.edu> に記載されている。さらに、BLAST アルゴリズムは、BLOSUM62 アミノ酸スコア付けマトリックスを使用し、使用可能である選択パラメーターは以下の通り

20 である: (A) 低い組成複雑性を有するクエリー配列のセグメント (Wootton および Federhen の SEG プログラム (Computers and Chemistry, 1993) により決定され; Wootton および Federhen, 1996 「配列データベースにおける組成編重領域の解析 (Analysis of compositionally biased regions in sequence databases)」Methods Enzymol. 266: 544-71 も参照されたい)、または、短周期性の内部リピートからなるセグメント (Claverie および States (Computers and Chemistry, 1993) の XNU プログラムにより決定される) をマスクするためのフィルターを含むこと、および (B) データベ

ース配列に対する適合を報告するための統計学的有意性の閾値、またはE-スコア (KarlinおよびAltschul, 1990) の統計学的モデルにしたがって、単に偶然により見出される適合の期待確率; ある適合に起因する統計学的有意差がE-スコア閾値より大きい場合、この適合は報告されない); 好ましい

5 E-スコア閾値の数値は0.5であるか、または好ましさが増える順に、0.25、0.1、0.05、0.01、0.001、0.0001、 $1e-5$ 、 $1e-10$ 、 $1e-15$ 、 $1e-20$ 、 $1e-25$ 、 $1e-30$ 、 $1e-40$ 、 $1e-50$ 、 $1e-75$ 、または $1e-100$ である。

10 本発明のポリヌクレオチドはまた、上記(a)から(d)の規則に従う規定配列と「相同な塩基配列」として、規定配列にストリンジェントな条件下、例えば、中程度または高程度にストリンジェントな条件下でハイブリダイズすることが可能であり、そして、好ましくは、RNA干渉を生じさせる活性を有するポリヌクレオチドを含む。

「ストリンジェントな条件下」とは、中程度または高程度にストリンジェントな条件においてハイブリダイズすることを意味する。具体的には、中程度にストリンジェントな条件は、例えば、DNAの長さに基づき、一般の技術を有する当業者によって、容易に決定することが可能である。基本的な条件は、Sambrookら、Molecular Cloning: A Laboratory Manual, 第3版, 第6-7章, Cold Spring Harbor Laboratory Press, 2001に示され、そしてニトロセルロース  
15 フィルターに関し、 $5\times$ SSC、0.5% SDS、1.0mM EDTA (pH 8.0) の前洗浄溶液、約40-50℃での、約50%ホルムアミド、 $2\times$ SSC- $6\times$ SSC (または約42℃での約50%ホルムアミド中の、スターク溶液 (Stark's solution) などの他の同様のハイブリダイゼーション溶液) のハイブリダイゼーション条件、および約60℃、 $0.5\times$ SSC、  
20 0.1% SDSの洗浄条件の使用が含まれる。好ましくは中程度にストリンジェントな条件は、約50℃、 $6\times$ SSCのハイブリダイゼーション条件を含む。高ストリンジェントな条件もまた、例えばDNAの長さに基づき、当業者によって、容易に決定することが可能である。一般に、こうした条件は、中程度にスト

リンジェントな条件よりも高い温度および／または低い塩濃度でのハイブリダイゼーション（例えば、約 65℃、6×SSC ないし 0.2×SSC、好ましくは 6×SSC、より好ましくは 2×SSC、最も好ましくは 0.2×SSC のハイブリダイゼーション）および／または洗浄を含み、例えば上記のようなハイブリダイゼーション条件、およびおよそ 68℃、0.2×SSC、0.1% SDS の洗浄を伴うと定義される。ハイブリダイゼーションおよび洗浄の緩衝液では、SSC（1×SSC は、0.15M NaCl および 15mM クエン酸ナトリウムである）に SSPE（1×SSPE は、0.15M NaCl、10mM NaH<sub>2</sub>PO<sub>4</sub>、および 1.25mM EDTA、pH 7.4 である）を代用することが可能であり、洗浄はハイブリダイゼーションが完了した後で 15 分間行う。

当業者に知られていて、以下にさらに記載したように、ハイブリダイゼーション反応と二本鎖の安定性を支配する基本原理を適用することによって望ましい度合いのストリンジェンシーを達成するためには、洗浄温度と洗浄塩濃度を必要に応じて調整することが可能であると理解すべきである（例えば、Sambrook ら、2001 を参照されたい）。核酸を未知配列の標的核酸へハイブリダイズさせる場合、ハイブリッドの長さはハイブリダイズする核酸のそれであると仮定される。既知配列の核酸をハイブリダイズさせる場合、ハイブリッドの長さは核酸の配列を並列し、最適な配列相補性をもつ単数または複数の領域を同定することによって決定可能である。50 塩基対未満の長さであることが予測されるハイブリッドのハイブリダイゼーション温度は、ハイブリッドの融解温度（ $T_m$ ）より 5–25℃ 低くなくてはならず、 $T_m$  は、以下の等式により決定される。長さ 18 塩基対未満のハイブリッドに関して、 $T_m (°C) = 2 (A + T \text{ 塩基数}) + 4 (G + C \text{ 塩基数})$ 。18 塩基対を超える長さのハイブリッドに関しては、 $T_m = 81.5°C + 16.6 (\log_{10} [Na^+]) + 41 (\text{モル分率 } [G + C]) - 0.63 (\% \text{ホルムアミド}) - 500 / n$  であり、ここで、 $N$  はハイブリッド中の塩基数であり、そして  $[Na^+]$  は、ハイブリダイゼーション緩衝液中のナトリウムイオン濃度である（1×SSC の  $[Na^+] = 0.165M$ ）。

上記のように、検索された配列は若干の改変が許容されるが、設計される塩基配列の塩基数は、検索された配列と同一とすることが特に好ましい。塩基数を同

一とした場合について改変の許容度を例示すると、設計される塩基配列の塩基が、好ましくは80%以上、より好ましくは90%以上、特に好ましくは95%以上検索された配列と一致することが好適である。例えば、塩基数19の塩基配列を設計する場合であれば、好ましくは16塩基以上、より好ましくは18塩基以上

5 が、検索された塩基配列と一致することが好ましい。また、検索された塩基配列と相同な配列を設計する場合、検索された塩基配列の3'末端の塩基と設計される塩基配列の3'末端の塩基とは同一であることが望ましく、また、検索された塩基配列の5'末端の塩基と設計される塩基配列の5'末端の塩基とが同一であることが望ましい。

- 10 通常 siRNA 分子には、オーバーハング部が設けられる。オーバーハング部とは、2本鎖の siRNA 分子において、各鎖の3'末端に設けられた、一本鎖の状態で突出した部分である。オーバーハング部は、生物の種類などにもよるが、塩基数は2が特に好適である。オーバーハング部の塩基配列は、基本的には任意であるが、検索元の標的遺伝子と同一の塩基配列、TT、あるいはUUなどが好
- 15 適に用いられる場合がある。上記のように検索された塩基配列と相同な配列となるように設計された規定配列の3'末端に、オーバーハング部を設けることにより、siRNAを構成するセンス鎖が設計される。

- また、最初から規定配列およびオーバーハング部を含めて検索を行い、設計することもできる。オーバーハング部の好ましい塩基数は2である。したがって、
- 20 例えば、塩基数19の規定配列および塩基数2のオーバーハング部からなる siRNA を構成する一本鎖の設計をする場合には、オーバーハング部を含めた siRNA の塩基数としては塩基数21の配列を標的遺伝子から検索すればよく、また2本鎖の状態について検索する場合には、塩基数23の配列を検索してもよい。

- shRNAは、前記2本鎖領域における一方の鎖の3'末端と、前記2本鎖領域
- 25 における他方の鎖の5'末端とをループ部で連結することによって1本鎖ポリヌクレオチドとしたものである。shRNAは、前記一方の鎖の5'末端および／または前記他方の鎖の3'末端に、一本鎖の状態で突出した部分を有していても良い。このような shRNA は、WO 01/49844 等、公知の手法に従って設計することができる。

本発明の塩基配列設計方法では、上記のように所望の標的遺伝子から所定の配列を検索してくるが、RNA干渉を生じさせようとする対象は、標的遺伝子の由来と必ずしも一致せずともよく、類縁種などに適用可能である。例えば、第1の種から単離された遺伝子を標的遺伝子とし、第1の種の類縁種である第2の種に用いる siRNA を設計することもできる。さらに、例えば複数種の哺乳類から共通配列を検索し、この共通配列から上記規定配列を検索して設計することにより、哺乳類に幅広く適用可能な siRNA の設計が可能である。複数の哺乳類に共通する配列は、他の哺乳類においても保存されている確率が高いと考えられるためである。

- 10 本発明の設計方法により、RNA干渉を生じさせるRNA分子を、高い確率でしかも容易に設計することができる。RNAの合成は、未だ労力、時間、費用を要するが、本発明の設計方法によりそれらを大幅に軽減することが可能である。

### <3>ポリヌクレオチドの作製方法

- 15 本発明のポリヌクレオチドの作製方法は、RNA干渉を生じさせる確率の高いポリヌクレオチドを作製する方法である。本発明のポリヌクレオチドは、ポリヌクレオチドの塩基配列が上記本発明の塩基配列設計方法に従って設計され、その配列設計に従うようにポリヌクレオチドが合成される。本発明のポリヌクレオチドには、上述のように、siRNA等の2本鎖ポリヌクレオチド型と、shRNA等の1本鎖ポリヌクレオチド型があるが、以下、2本鎖ポリヌクレオチドを中心に説明する。

- 20 配列の設計における好ましい形態は、上記塩基配列設計方法についての説明と同様である。なお、本発明の製造法により製造される2本鎖ポリヌクレオチドはRNAにより構成されることが好ましいが、一部にDNAを含む混成ポリヌクレオチドであってもよい。本明細書では一部にDNAを含むものも siRNA の概念に含める。また、ポリヌクレオチドを構成するRNAおよびDNAは、例えば、糖の水酸基のメチル化等、化学修飾を施されたものであってもよい。例えば、本明細書における siRNA は、DNA鎖とRNA鎖とのハイブリッド構造を有してもよい。かかるハイブリッド構造は、被導入体に導入した際に標的遺伝子の発現を抑制する活性を有するものであれば構造は特には限定されないが、センス鎖

がDNAで構成されアンチセンス鎖がRNAで構成された2本鎖ポリヌクレオチドであることが望ましい。

また、本明細書におけるsiRNAは、キメラ構造を有してもよい。キメラ構造とは、1本鎖ポリヌクレオチド中にDNAとRNAとを両方含む構造である。

5 かかるキメラ構造は、被導入体に導入した際に標的遺伝子の発現を抑制する活性を有するものであれば構造は特に限定されない。本発明者らの研究によれば、siRNAは構造・機能的にアシンメトリー性（非対称性）を有する傾向が認められ、RNA干渉を生じさせるという目的からすると、センス鎖の5'末端側の半分、アンチセンス鎖の3'末端側の半分はRNAで構成されることが望ましい。

10 ところで、キメラ構造を有するsiRNAでは、被導入体内における安定性や製造コスト等の点から、RNAの含量をできるだけ少なくすることが好ましい。そこで、高い標的遺伝子の発現抑制効果を維持しつつRNA含量を低減可能なsiRNAについて発明者らが鋭意検討したところ、センス鎖の5'末端から9～13ポリヌクレオチドの部分、およびアンチセンス鎖の3'末端から9～13ポリ  
15 ヌクレオチドの部分（例えば、センス鎖およびアンチセンス鎖の前記各末端から11ポリヌクレオチド、好ましくは10ポリヌクレオチド、さらに好ましくは9ポリヌクレオチドの部分）はRNAで構成されることが望ましく、特に、アンチセンス鎖の3'末端側が当該構成を有することが望ましいとの結果が得られた。なお、センス鎖のRNA部分とアンチセンス鎖のRNA部分とは、その位置が必  
20 ずしも一致していなくてもよい。

2本鎖ポリヌクレオチドは、一方の鎖が標的遺伝子の塩基配列中に含まれる、  
（a）から（d）の規則に従う規定配列と相同な塩基配列の3'末端にオーバーハング部を設けて形成され、他方の鎖が、前記規定配列と相同な塩基配列と相補的な配列の3'末端にオーバーハング部を設けて形成される。各鎖の塩基数はオー  
25 ーハング部を含め18～24であり、より好ましくは20～22、特に好ましくは21である。また、オーバーハング部の塩基数は2であることが好ましい。全体の塩基数が21、そのうちオーバーハング部が塩基数2で構成されるsiRNAは、哺乳類でも細胞毒性を生じさせずに高確率でRNA干渉を生じさせるsiRNAとして好適である。

RNAの合成は、例えば、化学合成によって合成してもよいし、また、通常のバイオテクノロジー等の手法に従って行うこともでき、所定の配列を有するDNA鎖を作製し、これを鋳型として転写酵素を用いて一本鎖RNAを合成し、一本鎖RNAを2本鎖化するなどの手法により合成することができる。

- 5     なお、分子生物学的な基本的手法については、BASIC METHODS IN MOLECULAR BIOLOGY (1986); Sambrookら、MOLECULAR CLONING: A LABORATORY MANUAL、第2版、Cold Spring Harbor Laboratory Press、Cold Spring Harbor、N. Y. (1989)、細胞工  
10 学ハンドブック、黒木登志夫ら編、羊土社(1992)、新遺伝子工学ハンドブック改訂第3版、村松ら編、羊土社(1999)など、多くの標準的な実験マニュアルがある。

- 上記本発明の製造方法により得られるポリヌクレオチドとして好ましい形態を示すと、RNA干渉の標的遺伝子の塩基配列中から前記(a)から(d)の規則  
15 に従う塩基数13～28の配列部位を検索し、一方の鎖が、標的遺伝子の塩基配列中に含まれる、前記(a)から(d)の規則に従う規定配列と相同な塩基配列の3'末端にオーバーハング部を設けて形成され、他方の鎖が、前記規定配列と相同な塩基配列と相補的な配列の3'末端にオーバーハング部を設けて形成され、各鎖の塩基数が15～30であるように合成された、2本鎖ポリヌクレオチドが例  
20 示される。当該ポリヌクレオチドは、RNA干渉を生じさせる確率の高いポリヌクレオチドである。

- また、siRNAを発現するような発現ベクターを調製することもできる。規定配列を含む配列を発現するベクターを、発現が行われ得る無細胞系または細胞系の条件下におくことで、発現ベクターを用いて所定のsiRNAを供給するこ  
25 とができる。

従来、siRNAの設計は、試験者の経験や勘に依存していたため、試行錯誤を繰り返すことが多かった。しかし、本発明の2本鎖ポリヌクレオチドの作製方法により、RNA干渉を生じさせる2本鎖ポリヌクレオチドを高い確率で製造することが可能である。上記本発明の検索方法、配列設計方法またはポリヌクレオ



チドの作製方法によれば、RNA干渉を利用した各種の試験や製造等に要する労力、時間、コストを大幅に削減することが可能である。すなわち、本発明は、遺伝子解析、創薬ターゲットの探索、創薬、遺伝子治療、生物種間の差の研究などのRNA干渉を利用する様々な試験、研究、開発、製造等を大幅に簡便にし、効率の向上を図ることができる。

本発明はまた一態様として、上述した本発明のポリペプチドの選択方法も提供する。具体的には、発現を抑制しようとする標的遺伝子の発現系に導入するポリヌクレオチドの選択方法であって、

少なくとも2本鎖領域を有し、

10 前記2本鎖領域における一方の鎖が、標的遺伝子の塩基配列中に含まれる、下記(a)から(f)の規則：

(a) 3'末端の塩基が、アデニン、チミンまたはウラシルであり；

(b) 5'末端の塩基が、グアニンまたはシトシンであり；

15 (c) 3'末端の7塩基の配列において、アデニン、チミンおよびウラシルからなる群より選ばれる1種または2種以上の塩基がリッチであり；

(d) 塩基数が、細胞毒性を生じさせずにRNA干渉を生じさせ得る数であり、；

(e) 10塩基以上グアニンまたはシトシンが連続する配列を含まず；

(f) 目的生物の全遺伝子配列のうち、標的遺伝子以外の他の遺伝子の塩基配列中に、当該規定配列と90%以上の相同性を有する配列が含まれない

20 に従う規定配列と相同な塩基配列からなり、そして、

前記2本鎖領域における他方の鎖が、前記規定配列と相同な塩基配列と相補的な配列を有する塩基配列からなるポリヌクレオチドを選択することを特徴とするポリヌクレオチドの選択方法、が提供される。

本発明の選択方法によって得られるポリペプチドの標的となる配列は、前述の

25 (a) - (f) の規則を満たす規定配列として、選択された配列である。好ましくは、配列番号47～配列番号817081のいずれであってよい。

本発明の選択方法は、前記選択したポリヌクレオチドから、さらに、前記標的遺伝子の規定配列と相同な塩基配列が、前記標的遺伝子以外の他の遺伝子の塩基配列とのミスマッチ数が少なくとも3塩基であり、かつ、当該少なくとも3塩基

のミスマッチを有する塩基配列を有する他の遺伝子の数が最も少ない配列であるポリヌクレオチドを選択することを含んでもよい。

- 即ち、当該標的配列が標的遺伝子に高い特異性を有する配列であれば、ポリヌクレオチドが当該標的配列を含む標的遺伝子に対してのみ選択的に発現抑制効果を奏しそれ以外の遺伝子に対しては発現抑制を生じさせない（すなわち、オフターゲット効果がより低い）ので、副作用の影響等を低減できる。したがって、ポリヌクレオチドの標的配列は、標的遺伝子に特異性が高いことがより好ましく、前述の（a）－（f）の規則を満たす規定配列として、選択された配列（例えば、配列番号 47～配列番号 817081）の中でも、よりオフターゲット効果を低減可能な配列であることが好ましい。好ましい標的遺伝子の規定配列として、他の遺伝子の塩基配列とのミスマッチ数が少なくとも 3 塩基であり、かつ、少なくとも 3 塩基のミスマッチを有する塩基配列を有するその他の遺伝子の数が最も少ない配列を選択することができる。「その他の遺伝子の数が最も少ない」とは、「少なくとも 3 塩基のミスマッチを有する塩基配列を有するその他の遺伝子」、即ち類似する遺伝子、ができるだけ存在しないこと、例えば、好ましくは 10 個以内、より好ましくは 6 個以内、さらにより好ましくは 1 個のみ存在する、あるいは、最も好ましくは全く存在しない、ことを意味する。

- 例えば、配列番号 47～配列番号 817081の中から、他の遺伝子の塩基配列とのミスマッチ数が 3 塩基であり（言い換えれば、19 塩基からなる（狭義の）規定配列のうち当該ミスマッチ 3 塩基以外の 16 塩基が一致する）、かつ、3 塩基のミスマッチを有する塩基配列を有するその他の遺伝子の数が最も少ない配列を選択して得られたのが、図 46 に示す 53998 種の配列である。よって、これらの配列のいずれかであることが特に好ましい。

#### <4>遺伝子の発現抑制方法

- 本発明の遺伝子発現抑制方法は、所定の塩基配列を検索する工程と、検索された塩基配列に基づいてポリヌクレオチドの塩基配列を設計して合成する工程と、得られたポリヌクレオチドを標的遺伝子を含む発現系に導入する工程とを含む。

所定の塩基配列を検索する工程は、上記 RNA 干渉の標的塩基配列検索方法に従う。好ましい態様も上記の通りである。また、検索された塩基配列に基づいて

s i R N A の塩基配列を設計して合成する工程は、上記、R N A 干渉を生じさせるポリヌクレオチドの塩基配列設計方法、ポリヌクレオチドの作製方法に従って行うことができ、好ましい形態も同様である。

得られたポリヌクレオチドは、標的遺伝子の発現系に添加して標的遺伝子の発  
5 現を抑制する。標的遺伝子の発現系とは、標的遺伝子が発現している体系のこと  
であり、より具体的には、少なくとも標的遺伝子のm R N A が形成される反応系  
を備える系である。標的遺伝子の発現系としては、In v i t r o、In v  
i v o のいずれも含まれる。標的遺伝子の発現系として、培養細胞、培養組織、  
生体などのほか、無細胞系で用いることも可能である。発現抑制をしようとする  
10 標的遺伝子（抑制標的遺伝子）は必ずしも検索された配列の由来と一致する生物  
種のものに限らずともよいが、検索対象遺伝子と抑制対象遺伝子の由来が近縁で  
あればあるほど、特異的かつ効果的に特定遺伝子の抑制を行うことができる。

標的遺伝子の発現系に導入するとは、標的遺伝子の発現反応系の中に取り込ま  
せるということである。具体的に例を挙げると、標的遺伝子を有する培養細胞に  
15 2本鎖ポリヌクレオチドをトランスフェクトし、細胞内に取り込ませる、規定配  
列およびオーバーハング部からなる塩基配列を有する発現ベクターを作製し、標  
的遺伝子を有する細胞内に導入する（W O 0 1 / 3 6 6 4 6、W O 0 1 / 4 9 8  
4 4）などの手法が挙げられる。

本発明の遺伝子抑制方法によれば、効率よくR N A 干渉を生じさせるポリヌク  
20 レオチドを得られるため、効率よく、また簡便に遺伝子を抑制することが可能で  
ある。したがって、例えば、対象遺伝子が疾患関連遺伝子の場合、当該疾患関連  
遺伝子を標的とするs i R N A（またはs h R N A）や、このようなs i R N A  
（またはs h R N A）を発現するベクターを、疾患関連遺伝子発現細胞へ導入す  
ることにより、疾患関連遺伝子を不活性化することができる。

25 本明細書において後述する実施例2-5では、ヒトピメンチン、ルシフェラー  
ゼ、S A R S ウイルス等の遺伝子に対する本発明のポリヌクレオチドのR N A i  
効果を、m R N A の対照に対する相対的発現量で調べた。図31、32および3  
5は、m R N A の発現量を定量P C Rで測定した結果が示されている。m R N A  
の相対発現量は図31、32および35において各々、約7-8%（実施例2、

図 3 1)、約 1 2 - 1 3 % (実施例 3、図 3 2)、数 % ないし約 1 5 % 未満 (実施例 5、図 3 5) と減少し、各遺伝子の発現抑制効果が確認された。また実施例 4 の図 3 4 は、RNA i 効果としての mRNA の発現量をルシフェラーゼ活性で調べた結果であるが、同様に、対照と比較して数 % ないし約 2 0 % 未満に減少した。

5      さらに、実施例 8 では、関連疾患や生物学的機能が明らかとなった図 4 6 に示す遺伝子のうち、無作為に選択した約 3 0 0 種の遺伝子について、ヒト由来 He L a 細胞での mRNA の発現量を相対的発現量で調べた。表 1 で示したように、当該遺伝子の発現抑制効果、すなわち RNA i 効果を評価するために算出した後述の R Q 値は、全て 1 未満であり、ほぼ全てが 0 . 5 未満であった。

10      本発明の遺伝子発現抑制方法において、「標的遺伝子の発現を抑制する」とは、標的遺伝子の mRNA 発現量が実質的に減少することを意味する。mRNA 発現量が実質的に減少していれば、その変化の幅の大小にかかわらず、発現抑制が実現されている。特に、当該減少量が大きいほど発現抑制の効果が大きいことから、限定されるわけではないが、好ましくは約 8 0 % 以下、より好ましくは約 5 0 %  
15      以下、さらにより好ましくは約 2 0 % 以下、さらにまた好ましくは約 1 5 % 以下、さらに好ましくは約 8 % 以下に減少する場合を発現抑制の判定基準としてもよい。本発明の規則に従って選択されたポリヌクレオチドを用いる本発明の遺伝子抑制方法によれば、標的遺伝子の mRNA 発現量を好ましくは少なくとも 5 0 % 以下に減少させることが可能となる。

## 20      < 5 > s i RNA 配列設計プログラム

以下、s i RNA 配列設計プログラムの実施形態例を説明する。

### (5-1) プログラムの概要

本プログラムは、ゲノムのシーケンスが進んでいない種、たとえばウマ、ブタなどに対して RNA 干渉を行う際に、既に公開されているヒトとマウスのホモ  
25      ログの配列情報をもとに、目的の種で使用可能な s i RNA の配列を計算するものである。本プログラムで s i RNA を設計すれば、標的遺伝子をシーケンスすることなく迅速に RNA 干渉を行うことができる。s i RNA の設計 (計算) にあたっては、G または C 配分の規則 (上記 (a) ~ (d) で示される規則) を考慮して RNA i 活性を有する確率が高い配列を選ぶとともに、標的遺伝子とは

無関係の遺伝子に対してRNA干渉が起こらないようホモロジーサーチによるチェックを行っている。なお、本明細書において「GまたはC」を「G/C」と、「AまたはT」を「A/T」とそれぞれ表記する場合がある。また、「A/T(U)」とは、デオキシリボ核酸による配列の場合T（チミン）であり、リボ核酸による

5 配列の場合U（ウラシル）であることを示す。

#### (5-2) siRNA設計の方針

ヒトの遺伝子Xおよび、そのホモログであるマウスの遺伝子Xの配列が既知であるとする。本プログラムはそれらの配列を読み込み、コード領域（CDS）部分から23塩基以上の完全に共通な配列を探し出す。この共通部分からsiRNA

10 Aを設計すれば、そのsiRNAはヒトとマウスの遺伝子Xとともに標的とすることができる（図1）。

ヒトとマウスとで完全に共通な部分は、他の哺乳類でも保存されている確率が高いと考えられるので、上記のsiRNAはヒトとマウスの遺伝子Xのみならず、他の哺乳類の遺伝子Xに対しても機能することが期待される。つまり、標的遺伝

15 子の配列が未知の動物種であっても、対応するヒトとマウスのホモログについて配列情報が既知であれば、本プログラムを用いてsiRNAを設計することができる。

なお、哺乳類においては、実際に機能するsiRNAは配列に規則性があることが判っている（図2）。本プログラムでは、その規則に適合した配列のみを選ぶようにした。図2は、RNAi効果を示すsiRNAの配列の規則性（siRNA

20 AのG/C配分の規則）を示す図である。図2において、21塩基の長さをもつ2本のRNA鎖が、それぞれ3'側に2塩基のオーバーハングを持つように5'側の19塩基どうしで塩基対を形成しているようなsiRNAで、塩基対を形成している19塩基のうちコーディング側の配列の、1) 3'末端がA/Uであること、

25 2) 5'末端がG/Cであること、3) 3'側の7文字は、A/Uの割合が高いこと、が求められる。特に、1) および2) の条件は重要である。

#### (5-3) プログラムの構造

本プログラムは3つの部分から構成されている。すなわち、(5-3-1) ヒトとマウスとで共通部位の配列（部分配列）を検索する部分、(5-3-2) G/C

配分の規則に基づいて配列にスコアをつける部分、(5-3-3)無関係の遺伝子を標的にしないようホモロジーサーチによりチェックする部分、である。

(5-3-1) 共通配列を検索する部分

複数の塩基配列ファイル (file 1, file 2, file 3,...) を読み込み、全ファイルに共通に出現する23文字の配列をすべて見いだす。

(計算例)

file 1としてヒトの遺伝子FBP1 (NM\_000507: Homo sapiens fructose-1, 6-bisphosphatase 1)、file 2としてマウスの遺伝子Fbp1 (NM\_019395: Mus musculus fructose biphosphatase 1) の配列をプログラムに入力した。その結果、両者の配列 (図3) から両者に共通な23文字の配列 (ヒトFBP1とマウスFbp1に共通な配列) が15個見いだされた (図4)。

(5-3-2) 配列にスコアをつける部分

前述のG/C配分の規則に適合した配列のみを選択するために、23文字の配列に対してスコアを付ける。

(方法)

23文字の配列に対して、以下のようにスコアを付ける。

スコア1: 先頭から21文字目がA/Uか。[no=0, yes=1]

スコア2: 先頭から3文字目がG/Cか。[no=0, yes=1]

スコア3: 先頭から15文字目から21文字目までの7文字のうち、A/Uの数。[0-7]

総合スコア: スコア1~3の積。ただし積が3以下の場合は0とする。

(計算例) 図4に示した15個の配列に対して計算を行った結果を、図5に示す。図5は、ヒトFBP1とマウスFbp1に共通な配列にスコアを付した図である。なお、図5に示す配列の後には、スコア1、スコア2、スコア3、総合スコアが順に記載されている。

(5-3-3) 無関係の遺伝子を標的にしないようチェックする部分

設計したsiRNAが、標的遺伝子とは無関係の遺伝子に対して機能しないよ

う、公開されているヒト・マウスの全mRNAに対してホモロジーサーチを行い、無関係の遺伝子がヒットする度合いを評価する。ホモロジーサーチには各種アルゴリズムが使用可能であるが、ここでは、BLASTを使用した例を示す。なお、BLASTを用いる場合は、検索配列が23塩基と短いことを考慮して、Word Sizeを十分に小さくすることが望ましい。

BLASTの結果、E valueが10.0以下のヒットのうち、標的遺伝子以外の全てのヒットについて、E valueの逆数の総和を求める（以下、この値をホモロジー・スコアと呼ぶ）。すなわち、ホモロジー・スコア（X）は、下記式により求められる。

$$X = \sum_{all\ hits} \frac{1}{E}$$

注意点：E valueが低いヒットほど、queryの23文字とホモロジーが高く、siRNAの標的とされる危険性が高い。また、ヒットの数が多いほど、より多くの無関係な遺伝子を標的にする確率が高い。この2点を考慮して、siRNAが標的遺伝子と無関係の遺伝子を標的にする危険性を、上の式を用いて評価している。

（計算例）

23文字の配列に対して、上記のホモロジーサーチを行った結果と、ホモロジー・スコアを示す（図6、図7）。なお、図6には、ヒトFBP1とマウスFbp1に共通な配列「c a c c c t g a c c c g c t t c g t c a t g g」をBLASTした結果が示されており、最初の2行は、マウスFbp1とヒトFBP1がヒットしたものである。ホモロジー・スコアは5.9で、ヒットが少ない例である。この配列のsiRNAは、他の遺伝子を標的にする危険性が低い。また、図7には、ヒトFBP1とマウスFbp1に共通な配列「g c c t t c t g a g a a g g a t g c t c t g c」をBLASTした結果が示されている。ヒットが多い例で、ホモロジー・スコアは170.8である。他の遺伝子を標的にする危険

性が高いため、s i RNAとして適さない。

実際には、上記の(5-3-1)、(5-3-2)、(5-3-3)の部分は一体として構成してもよく、図3に示したヒトとマウスの配列を入力すると、図8のような出力が直接得られる。ここで、図8に示す配列の後には、スコア1、スコア2、スコア3、総合スコア、および、ホモロジー・スコアを10倍した値が順に記載されている。なお、処理時間短縮のため、総合スコアが0の配列はホモロジー・スコアを計算しないようにしてもよい。この結果から、s i RNAとして「36 c a c c c t g a c c c g c t t c g t c a t g g」の部分を使えばよいことがわかる。また、(5-3-1)、(5-3-2)、(5-3-3)の部分のうち1つの機能を単独で利用することもできる。

#### (5-4) 実際の計算

ヒト・マウス間のホモログのうち約6400遺伝子のペアに対して、実際に本プログラムでs i RNAの設計をおこなった。その結果、約7割について、ヒトとマウスとに共通な配列で、かつ有効なs i RNAの配列規則性の規則を満たし、無関係な遺伝子を標的としないようなs i RNAが設計できた。

これらのs i RNAはヒトとマウスのみならず、多岐の哺乳類で効果的に標的遺伝子を抑える効果があると期待され、家畜や愛玩動物などへの応用など産業的価値が高いと考えられる。また本プログラムを用い、同種内の複数の遺伝子、たとえばe I F 2 C 1とe I F 2 C 2を同時に標的とするs i RNAを設計することも可能であり、本プログラムが提供するs i RNA設計の手法は、応用範囲が広くきわめて強力なものといえる。さらに、ヒトとマウスの共通な部分の配列を用いてP C Rプライマーを設計すれば、多岐の哺乳類で目的の遺伝子を増幅できる、といった利用法もある。

なお、s i RNA配列設計プログラムを実行する装置の実施の形態は、下記<7>s i RNA配列設計プログラムを実行する塩基配列処理装置等の欄に詳細に示す。

#### <6> s i RNA配列設計ビジネスモデルシステム

本発明のs i RNA配列設計ビジネスモデルシステムは、s i RNA配列設計プログラムを適用するにあたり、ゲノムデータベース、E S Tデータベース、進



化系統樹データベースを本プログラムのロジックに添って単独で或いは組み合わせて参照し、遺伝子配列情報の *available* 状態に応じた効果的な *siRNA* を顧客へ提案するというシステムである。 *available* 状態とは、情報が利用可能な状態であることをいう。

5       (1) ゲノム情報が *available* だが ORF の特定が困難なものについては、EST 情報、等を基にエクソン想定部位に対して効果的な *siRNA* 候補を抽出し、スプライシングバリエーションを考慮した *siRNA* 配列とその評価結果を表示する。

10       (2) 遺伝子配列、遺伝子名が明らかなものは、遺伝子配列または遺伝子名を入力後、効果的な *siRNA* 候補を抽出し、*siRNA* 配列とその評価結果を表示する。

15       (3) ゲノム情報が *available* でないものについては、同種の遺伝子機能を保存している類縁関係（同属、乃至は起源を同じとする）にある生物種の遺伝子配列、或いは進化系統樹的に挟まれた、ゲノム配列が *available* な 2 種類以上の生物種の遺伝子配列、を用いて効果的な *siRNA* 候補を抽出し、*siRNA* 配列とその評価結果を表示する。

20       (4) 感染症の遺伝子機能解析、創薬ターゲット発掘には、微生物のゲノムデータベース・進化系統樹データベースへ更に微生物のアポトーシス誘導部位情報、機能発現部位情報を組み合わせて網羅的な *siRNA* 候補配列を求める手法が有効である。

#### <7> *siRNA* 配列設計プログラムを実行する塩基配列処理装置等

以下、上述した *siRNA* 配列設計プログラムを実行する装置である、本発明にかかる塩基配列処理装置、塩基配列処理方法をコンピュータに実行させるプログラム、記録媒体、および、塩基配列処理システムの実施の形態を図面に基づいて詳細に説明する。なお、この実施の形態によりこの発明が限定されるものではない。

#### [発明の概要]

以下、本発明の概要について説明し、その後、本発明の構成および処理等について詳細に説明する。図 12 は、本発明の基本原理を示す原理構成図である。

本発明は、概略的に、以下の基本的特徴を有する。すなわち、本発明は、RNA干渉の標的遺伝子の塩基配列情報を取得して、塩基配列情報の予め定めた塩基数の配列部位である部分塩基配列情報を作成する（ステップS-1）。

ここで、ステップS-1において、塩基配列情報の標的遺伝子のコード領域、  
5 または、転写領域に対応する部位から、予め定めた塩基数の部分塩基配列情報を作成してもよい。また、異なる生物に由来する複数の塩基配列情報（例えば、ヒトの塩基配列情報およびマウスの塩基配列情報など）の間で共通する、予め定めた塩基数の部分塩基配列情報を作成してもよい。また、同じ生物種における類似する複数の塩基配列情報の間で共通する、予め定めた塩基数の共通な部分塩基配  
10 列情報を作成してもよい。また、異なる生物に由来する複数の塩基配列情報の標的遺伝子のコード領域、または、転写領域に対応する部位から、予め定めた塩基数の共通な部分塩基配列情報を作成してもよい。また、同じ生物種における類似する複数の塩基配列情報の標的遺伝子のコード領域、または、転写領域に対応する部位から、予め定めた塩基数の共通な部分塩基配列情報を作成してもよい。こ  
15 れにより、標的遺伝子に特異的にRNA干渉を生じさせる規定配列を効率よく選択することができ、計算負荷を軽減できる。

さらに、ステップS-1において、オーバーハング部位を含む部分塩基配列情報を作成してもよい。具体的には、例えば、オーバーハング部位が含まれていることを表すオーバーハング部位含有情報が付加された部分塩基配列情報を作成し  
20 てもよい。すなわち、部分塩基配列情報とオーバーハング部位含有情報とを相互に関連付けてもよい。これにより、最初から規定配列およびオーバーハング部位を含めて選択を行い、設計することができるようになる。

なお、上述の予め定めた塩基数の上限は、オーバーハング部位を含まない場合は、好ましくは28以下、より好ましくは22以下、さらに好ましくは20以下  
25 であり、オーバーハング部位を含む場合は、好ましくは32以下、より好ましくは26以下、さらに好ましくは24以下である。また、予め定めた塩基数の下限は、オーバーハング部位を含まない場合は、好ましくは13以上、より好ましくは16以上、さらに好ましくは18以上であり、オーバーハング部位を含む場合は、好ましくは17以上、より好ましくは20以上、さらに好ましくは22以上

である。そして、最も好ましい予め定めた塩基数は、オーバーハング部位を含まない場合は、19であり、オーバーハング部位を含む場合は、23である。これにより、哺乳類においても細胞毒性を生じさせずにRNA干渉を生じさせる規定配列を効率よく選択することができる。

5 ついで、ステップS-1にて作成された部分塩基配列情報の3'末端の塩基がアデニン、チミン、または、ウラシルであるか否かを判定する（ステップS-2）。なお、具体的には、例えば、3'末端の塩基がアデニン、チミン、または、ウラシルであるときには「1」を、そうでないときには「0」を判定結果として出力してもよい。

10 ついで、ステップS-1にて作成された部分塩基配列情報の5'末端の塩基がグアニン、または、シトシンであるか否かを判定する（ステップS-3）。なお、具体的には、例えば、5'末端の塩基がグアニン、または、シトシンであるときには「1」を、そうでないときには「0」を判定結果として出力してもよい。

15 ついで、ステップS-1にて作成された部分塩基配列情報の3'末端の7塩基からなる塩基配列情報が、アデニン、チミン、および、ウラシルからなる群より選ばれる1種または2種以上の塩基がリッチな塩基配列情報であるか否かを判定する（ステップS-4）。なお、具体的には、例えば、部分塩基配列情報の3'末端の7塩基からなる塩基配列情報に含まれる、アデニン、チミン、および、ウラシルからなる群より選ばれる1種または2種以上の塩基の数を判定結果として出力  
20 してもよい。ステップS-4における判定の規則は、ステップS-1にて作成された部分塩基配列情報の3'末端近傍の塩基配列情報がアデニン、チミン、および、ウラシルからなる群より選ばれる1種または2種以上の塩基がリッチな塩基配列情報であることを規定しており、具体的に検索を行う際の一指標として3'末端から7塩基の範囲内の塩基配列情報がアデニン、チミン、および、ウラシルからなる群より選ばれる1種または2種以上の塩基がリッチな塩基配列情報であることを規定している。  
25

ここで、ステップS-4において、「リッチな塩基配列情報」は、上述の<1> RNA干渉の標的塩基配列検索方法に記述されている「リッチな配列」であり、具体的には、例えば、ステップS-1にて作成された部分塩基配列情報が19塩

基程度からなる場合、当該部分塩基配列情報の7塩基からなる塩基配列情報が、アデニン、チミン、および、ウラシルからなる群より選ばれる1種または2種以上の塩基が少なくとも好ましくは3塩基以上、より好ましくは4塩基以上、特に好ましくは5塩基以上含まれる塩基配列情報である。

- 5      また、ステップS-2からステップS-4において、オーバーハング部位を含む部分塩基配列情報を判定する場合、部分塩基配列情報のオーバーハング部位を除いた配列部位を判定対象として判定する。

ついで、ステップS-2、ステップS-3、および、ステップS-4にて判定された結果に基づいて、ステップS-1にて作成された部分塩基配列情報から標的遺伝子に特異的にRNA干渉を生じさせる規定配列情報を選択する（ステップS-5）。

- 10      具体的には、例えば、ステップS-2にて3'末端の塩基がアデニン、チミン、または、ウラシルであると判定され、ステップS-3にて5'末端の塩基がグアニン、または、シトシンであると判定され、かつ、ステップS-4にて部分塩基配列情報の3'末端の7塩基からなる塩基配列情報が、アデニン、チミン、および、ウラシルからなる群より選ばれる1種または2種以上の塩基がリッチな塩基配列情報であると判定された部分塩基配列情報を規定配列情報として選択する。ここで、具体的には、例えば、ステップS-2、ステップS-3、および、ステップS-4にて出力される数値の積を算出し、当該積の値に基づいて、ステップS-1にて作成された部分塩基配列情報から規定配列情報を選択してもよい。

20      これにより、哺乳類などにおいて、RNA干渉を生じさせる確率が極めて高い、つまりRNA干渉に有効なsiRNAの配列を効率よく、容易に作成することができる。

- 25      ここで、ステップS-5にて選択された規定配列情報の少なくとも一方の末端にオーバーハング部位を付加してもよい。なお、例えば、ターゲット側を検索する場合は、規定配列情報の両末端にオーバーハング部位を付加してもよい。これにより、RNA干渉を生じさせるポリヌクレオチドの設計を簡便化することができる。

なお、上述のオーバーハング部位の塩基数は、上述の<2>RNA干渉を生じ

させるポリヌクレオチドの塩基配列設計方法に記述されている塩基数であり、具体的には、例えば、2が特に好適である。

また、ステップS-5にて選択された規定配列情報と同一または類似の塩基配列情報を、他の塩基配列情報（例えばNCBIのRefSeq（Reference Sequence project）などの公的データベースで公開されている塩基配列情報）から、例えばBLAST、FASTA、sssearchなどの既存のホモロジー検索手法を用いて検索し、検索された同一または類似の塩基配列情報に基づいて、規定配列情報が標的遺伝子とは無関係の遺伝子を標的にするか否かを評価してもよい。

10 具体的には、例えば、ステップS-5にて選択された規定配列情報と同一または類似の塩基配列情報を、他の塩基配列情報（例えばNCBIのRefSeqなどの公的データベースで公開されている塩基配列情報）から、例えばBLAST、FASTA、sssearchなどの既存のホモロジー検索手法を用いて検索し、  
15 検索された同一または類似の塩基配列情報のうち標的遺伝子とは無関係の遺伝子の塩基配列情報の総数、および、標的遺伝子とは無関係の遺伝子の塩基配列情報に付された同一類似の度合いを示す値（例えばBLAST、FASTAおよびsssearchの場合は、「E value」）に基づいて、同一類似の度合いを示す値の逆数の総和を算出し、算出された総和に基づいて（例えば、算出された総和の大小などに基づいて）、規定配列情報が標的遺伝子とは無関係の遺伝子を標的に  
20 するか否かを評価してもよい。

これにより、規定配列情報から、標的とする遺伝子だけに特異的にRNA干渉を生じさせる配列を選出することができる。

以上、本発明により選択された、標的遺伝子と関係のない遺伝子についてまでRNA干渉を生じさせない規定配列情報に基づいてRNAの合成を行えば、それ  
25 にかかる労力、時間、費用を従来に比べ大幅に軽減することができる。

#### [システム構成]

まず、本システムの構成について説明する。図13は、本発明が適用される本システムの構成の一例を示すブロック図であり、該構成のうち本発明に関係する部分のみを概念的に示している。

本システムは、概略的に、RNA干渉の標的遺伝子の塩基配列情報を処理する塩基配列処理装置100と、配列情報や構造情報等に関する外部データベースやホモロジー検索等の外部プログラム等を提供する外部システム200とを、ネットワーク300を介して通信可能に接続して構成されている。

- 5 図13において、ネットワーク300は、塩基配列処理装置100と外部システム200とを相互に接続する機能を有し、例えば、インターネット等である。

図13において、外部システム200は、ネットワーク300を介して、塩基配列処理装置100と相互に接続され、利用者に対して配列情報や構造情報等に関する外部データベースやホモロジー検索やモチーフ検索等の外部プログラムを  
10 実行するウェブサイトを提供する機能を有する。

ここで、外部システム200は、WEBサーバやASPサーバ等として構成してもよく、そのハードウェア構成は、一般に市販されるワークステーション、パーソナルコンピュータ等の情報処理装置およびその付属装置により構成してもよい。また、外部システム200の各機能は、外部システム200のハードウェア  
15 構成中のCPU、ディスク装置、メモリ装置、入力装置、出力装置、通信制御装置等およびそれらを制御するプログラム等により実現される。

図13において塩基配列処理装置100は、概略的に、塩基配列処理装置100の全体を統括的に制御するCPU等の制御部102、通信回線等に接続されるルータ等の通信装置（図示せず）に接続される通信制御インターフェース部10  
20 4、入力装置112や出力装置114に接続される入出力制御インターフェース部108、および、各種のデータベースやテーブルなどを格納する記憶部106を備えて構成されており、これら各部は任意の通信路を介して通信可能に接続されている。さらに、この塩基配列処理装置100は、ルータ等の通信装置および専用線等の有線または無線の通信回線を介して、ネットワーク300に通信可能  
25 に接続されている。

記憶部106に格納される各種のデータベースやテーブル（標的遺伝子塩基配列ファイル106a～標的遺伝子アノテーションデータベース106h）は、固定ディスク装置等のストレージ手段であり、各種処理に用いる各種のプログラムやテーブルやファイルやデータベースやウェブページ用ファイル等を格納する。

これら記憶部 106 の各構成要素のうち、標的遺伝子塩基配列ファイル 106 a は、RNA 干渉の標的遺伝子の塩基配列情報を格納する標的遺伝子塩基配列格納手段である。図 14 は、標的遺伝子塩基配列ファイル 106 a に格納される情報の一例を示す図である。

- 5 標的遺伝子塩基配列ファイル 106 a に格納される情報は、図 14 に示すように、RNA 干渉の標的遺伝子の塩基配列情報を一意に識別する塩基配列識別情報（例えば、図 14 の「NM\_\_000507」）と、塩基配列情報（例えば、図 14 の「ATGGCTGA・・・AGTGA」）とを相互に関連付けて構成されている。

- 10 また、部分塩基配列ファイル 106 b は、RNA 干渉の標的遺伝子の塩基配列情報の予め定めた塩基数の配列部位である部分塩基配列情報を格納する部分塩基配列格納手段である。図 15 は、部分塩基配列ファイル 106 b に格納される情報の一例を示す図である。

- 部分塩基配列ファイル 106 b に格納される情報は、図 15 に示すように、部分塩基配列情報を一意に識別する部分塩基配列識別情報（例えば、図 15 の「NM\_\_000507:36」）と、部分塩基配列情報（例えば、図 15 の「caccct・・・tcattgg」）と、オーバーハング部位が含まれていることを表すオーバーハング部位含有情報（例えば、図 15 の「含有」）とを相互に関連付けて構成されている。

- 20 また、判定結果ファイル 106 c は、後述する 3' 末端塩基判定部 102 b、5' 末端塩基判定部 102 c、および、特定塩基含有判定部 102 d にて判定された結果を格納する判定結果手段である。図 16 は、判定結果ファイル 106 c に格納される情報の一例を示す図である。

- 判定結果ファイル 106 c に格納される情報は、図 16 に示すように、部分塩基配列識別情報（例えば、図 16 の「NM\_\_000507:36」）と、3' 末端塩基判定部 102 b にて判定された結果である 3' 末端塩基判定結果（例えば、図 16 の「1」）と、5' 末端塩基判定部 102 c にて判定された結果である 5' 末端塩基判定結果（例えば、図 16 の「1」）と、特定塩基含有判定部 102 d にて判定された結果である特定塩基含有判定結果（例えば、図 16 の「4」）と、3' 末端塩基判定部 102 b、5' 末端塩基判定部 102 c、および、特定塩基含有判定

部 1 0 2 d にて判定された結果を総合した結果である総合判定結果（例えば、図 1 6 の「4」）とを相互に関連付けて構成されている。

5       なお、図 1 6 において、3' 末端塩基判定結果および 5' 末端塩基判定結果は、3' 末端塩基判定部 1 0 2 b、5' 末端塩基判定部 1 0 2 c のそれぞれにて「含む」と判定された場合「1」を設定し、「含まない」と判定された場合「0」を設定した場合の一例である。また、図 1 6 において、特定塩基含有判定結果は、部分塩基配列情報の 3' 末端の 7 塩基からなる塩基配列情報に含まれる、アデニン、チミン、および、ウラシルからなる群より選ばれる 1 種または 2 種以上の塩基の数を設定した場合の一例である。さらに、図 1 6 において、総合判定結果は、3' 末端塩基判定結果、5' 末端塩基判定結果、および、特定塩基含有判定結果の積を設定  
10       した場合の一例である。なお、具体的には、例えば、当該積が 3 以下の場合、「0」を設定してもよい。

15       また、規定配列ファイル 1 0 6 d は、標的遺伝子に特異的に RNA 干渉を生じさせる部分塩基配列情報である規定配列情報を格納する規定配列格納手段である。図 1 7 は、規定配列ファイル 1 0 6 d に格納される情報の一例を示す図である。

20       規定配列ファイル 1 0 6 d に格納される情報は、図 1 7 に示すように、部分塩基配列識別情報（例えば、図 1 7 の「NM\_\_0 0 0 5 0 7 : 3 6」）と、標的遺伝子に特異的に RNA 干渉を生じさせる部分塩基配列情報である規定配列情報（例えば、図 1 7 の「c a c c c t . . . t c a t g g」）とを相互に関連付けて構成されている。

25       また、参照配列データベース 1 0 6 e は、後述する同一類似塩基配列検索部 1 0 2 g にて規定配列情報と同一または類似の塩基配列情報を検索するために参照する塩基配列情報である参照塩基配列情報を格納するデータベースである。なお、参照配列データベース 1 0 6 e は、インターネットを経由してアクセスする外部の塩基配列情報データベースであってもよく、また、これらのデータベースをコピーしたり、オリジナルの配列情報を格納したり、さらに独自のアノテーション情報等を付加したりして作成したインハウスデータベースであってもよい。図 1 8 は、参照配列データベース 1 0 6 e に格納される情報の一例を示す図である。



参照配列データベース 106 e に格納される情報は、図 18 に示すように、参照配列識別情報（例えば、図 18 の「ref | NM\_015820.1 |」）と、参照塩基配列情報（例えば、図 18 の「c a c c c t . . . g c a t g g」）とを相互に関連付けて構成されている。

- 5      また、同一類似度ファイル 106 f は、後述する同一類似塩基配列検索部 102 g にて検索された同一または類似の塩基配列情報に付された同一類似の度合いを示す値である同一類似度を格納する同一類似度格納手段である。図 19 は、同一類似度ファイル 106 f に格納される情報の一例を示す図である。

- 10      同一類似度ファイル 106 f に格納される情報は、図 19 に示すように、部分塩基配列識別情報（例えば、図 19 の「NM\_000507:36」）と、参照配列識別情報（例えば、図 19 の「ref | NM\_015820.1 |」および「ref | NM\_003837.1 |」）と、同一類似度（例えば、図 19 の「0.52」）とを相互に関連付けて構成されている。

- 15      また、評価結果ファイル 106 g は、後述する無関係遺伝子標的評価部 102 h にて標的遺伝子とは無関係の遺伝子を標的にするか否かを評価した結果を格納する評価結果格納手段である。図 20 は、評価結果ファイル 106 g に格納される情報の一例を示す図である。

- 20      評価結果ファイル 106 g に格納される情報は、図 20 に示すように、部分塩基配列識別情報（例えば、図 20 の「NM\_000507:36」および「NM\_000507:441」）と、後述する総和算出部 102 m にて算出された総和（例えば、図 20 の「5.9」および「170.8」）と、評価結果（例えば、図 20 の「非標的」および「標的」）とを相互に関連付けて構成されている。なお、図 20 において、「非標的」は、規定配列情報が標的遺伝子とは無関係の遺伝子を標的にしないことを意味し、また、「標的」は、規定配列情報が標的遺伝子とは無関係の遺伝子を標的にすることを意味する。
- 25

また、標的遺伝子アノテーションデータベース 106 h は、標的遺伝子に関するアノテーション情報を格納する標的遺伝子アノテーション格納手段である。なお、標的遺伝子アノテーションデータベース 106 h は、インターネットを経由してアクセスする、遺伝子に関するアノテーション情報を格納する外部のアノテ

ーションデータベースであってもよく、また、これらのデータベースをコピーしたり、オリジナルの配列情報を格納したり、さらに独自のアノテーション情報等を付加したりして作成したインハウスデータベースであってもよい。

5 標的遺伝子アノテーションデータベース106hに格納される情報は、標的遺伝子を識別する標的遺伝子識別情報（例えば標的遺伝子の遺伝子名、アクセッション（Accession）番号など（例えば、図3の最上部に記載の「NM\_000507」、「FBP1」）と標的遺伝子に関する簡略的な情報（例えば図3の最上部に記載の「Homo sapiens fructose-1, 6-bisphosphatase 1」）とを相互に関連付けて構成されている。

10 また、図13において、通信制御インターフェース部104は、塩基配列処理装置100とネットワーク300（またはルータ等の通信装置）との間における通信制御を行う。すなわち、通信制御インターフェース部104は、他の端末と通信回線を介してデータを通信する機能を有する。

また、図13において、入出力制御インターフェース部108は、入力装置112や出力装置114の制御を行う。ここで、出力装置114としては、モニタ（家庭用テレビを含む）の他、スピーカを用いることができる（なお、以下においては出力装置114をモニタとして記載する場合がある）。また、入力装置112としては、キーボード、マウス、および、マイク等を用いることができる。また、モニタも、マウスと協働してポインティングデバイス機能を実現する。

20 また、図13において、制御部102は、OS（Operating System）等の制御プログラム、各種の処理手順等を規定したプログラム、および所要データを格納するための内部メモリを有し、これらのプログラム等により、種々の処理を実行するための情報処理を行う。制御部102は、機能概念的に、部分塩基配列作成部102a、3'末端塩基判定部102b、5'末端塩基判定部102c、特定塩基含有判定部102d、規定配列選択部102e、オーバーハング部位付加部102f、同一類似塩基配列検索部102g、および、無関係遺伝子標的評価部102hを備えて構成されている。

このうち、部分塩基配列作成部102aは、RNA干渉の標的遺伝子の塩基配列情報を取得して、塩基配列情報の予め定めた塩基数の配列部位である部分塩基

配列情報を作成する部分塩基配列作成手段である。ここで、部分塩基配列作成部 102 a は、図 21 に示すように、領域指定塩基配列作成部 102 i、共通塩基配列作成部 102 j、および、オーバーハング部位含有塩基配列作成部 102 k をさらに含んで構成される。

- 5 図 21 は、本発明が適用される本システムの部分塩基配列作成部 102 a の構成の一例を示すブロック図であり、該構成のうち本発明に関係する部分のみを概念的に示している。

図 21 において、領域指定塩基配列作成部 102 i は、塩基配列情報の標的遺伝子のコード領域、または、転写領域に対応する部位から、予め定めた塩基数の部分塩基配列情報を作成する領域指定塩基配列作成手段である。

また、共通塩基配列作成部 102 j は、異なる生物に由来する複数の塩基配列情報の間で共通する、予め定めた塩基数の部分塩基配列情報を作成する共通塩基配列作成手段である。

また、オーバーハング部位含有塩基配列作成部 102 k は、オーバーハング部位を含む部分塩基配列情報を作成するオーバーハング部位含有塩基配列作成手段である。

再び図 13 に戻り、3'末端塩基判定部 102 b は、部分塩基配列情報の 3'末端の塩基がアデニン、チミン、または、ウラシルであるか否かを判定する 3'末端塩基判定手段である。

20 また、5'末端塩基判定部 102 c は、部分塩基配列情報の 5'末端の塩基がグアニン、または、シトシンであるか否かを判定する 5'末端塩基判定手段である。

また、特定塩基含有判定部 102 d は、部分塩基配列情報の 3'末端の 7 塩基からなる塩基配列情報が、アデニン、チミン、および、ウラシルからなる群より選ばれる 1 種または 2 種以上の塩基がリッチな塩基配列情報であるか否かを判定する特定塩基含有判定手段である。

25 また、規定配列選択部 102 e は、3'末端塩基判定部 102 b、5'末端塩基判定部 102 c、および、特定塩基含有判定部 102 d にて判定された結果に基づいて、部分塩基配列情報から標的遺伝子に特異的に RNA 干渉を生じさせる規定配列情報を選択する規定配列選択手段である。

また、オーバーハング部位付加部 1 0 2 f は、規定配列情報の少なくとも一方の末端にオーバーハング部位を付加するオーバーハング部位付加手段である。

また、同一類似塩基配列検索部 1 0 2 g は、規定配列情報と同一または類似の塩基配列情報を他の塩基配列情報から検索する同一類似塩基配列検索手段である。

また、無関係遺伝子標的評価部 1 0 2 h は、同一または類似の塩基配列情報に基づいて、規定配列情報が標的遺伝子とは無関係の遺伝子を標的にするか否かを評価する無関係遺伝子標的評価手段である。ここで、無関係遺伝子標的評価部 1 0 2 h は、図 2 2 に示すように、総和算出部 1 0 2 m、および、総和基準評価部 1 0 2 n をさらに含んで構成される。

図 2 2 は、本発明が適用される本システムの無関係遺伝子標的評価部 1 0 2 h の構成の一例を示すブロック図であり、該構成のうち本発明に関係する部分のみを概念的に示している。

図 2 2 において、総和算出部 1 0 2 m は、同一または類似の塩基配列情報のうち標的遺伝子とは無関係の遺伝子の塩基配列情報の総数、および、標的遺伝子とは無関係の遺伝子の塩基配列情報に付された同一類似の度合いを示す値（同一類似度）に基づいて、同一類似の度合いを示す値の逆数の総和を算出する総和算出手段である。

また、総和基準評価部 1 0 2 n は、総和算出部 1 0 2 m にて算出された総和に基づいて、規定配列情報が標的遺伝子とは無関係の遺伝子を標的にするか否かを評価する総和基準標的評価手段である。

なお、これら各部によって行なわれる処理の詳細については、後述する。

#### 〔システムの処理〕

次に、このように構成された本実施の形態における本システムの処理の一例について、以下に図 2 3、および、図 2 4 を参照して詳細に説明する。

#### 〔メイン処理〕

まず、メイン処理の詳細について図 2 3 等を参照して説明する。図 2 3 は、本実施形態における本システムのメイン処理の一例を示すフローチャートである。

まず、塩基配列処理装置 1 0 0 は、部分塩基配列作成部 1 0 2 a にて行われる

部分塩基配列作成処理により、RNA干渉の標的遺伝子の塩基配列情報を取得して標的遺伝子塩基配列ファイル106aの所定の記憶領域に格納し、塩基配列情報の予め定めた塩基数の配列部位である部分塩基配列情報を作成し、作成された部分塩基配列情報を部分塩基配列ファイル106bの所定の記憶領域に格納する

5 (ステップSA-1)。

ここで、ステップSA-1において、部分塩基配列作成部102aは、領域指定塩基配列作成部102iの処理により、塩基配列情報の標的遺伝子のコード領域、または、転写領域に対応する部位から、予め定めた塩基数の部分塩基配列情報を作成し、作成された部分塩基配列情報を部分塩基配列ファイル106bの所定の記憶領域に格納してもよい。

また、ステップSA-1において、部分塩基配列作成部102aは、共通塩基配列作成部102jの処理により、異なる生物に由来する複数の塩基配列情報(例えば、ヒトの塩基配列情報およびマウスの塩基配列情報など)の間で共通する、予め定めた塩基数の部分塩基配列情報を作成し、作成された部分塩基配列情報を部分塩基配列ファイル106bの所定の記憶領域に格納してもよい。なお、同じ生物種における類似する複数の塩基配列情報の間で共通する、予め定めた塩基数の共通な部分塩基配列情報を作成してもよい。

また、ステップSA-1において、部分塩基配列作成部102aは、領域指定塩基配列作成部102i、および、共通塩基配列作成部102jの処理により、異なる生物に由来する複数の塩基配列情報の標的遺伝子のコード領域、または、転写領域に対応する部位から、予め定めた塩基数の共通な部分塩基配列情報を作成し、作成された部分塩基配列情報を部分塩基配列ファイル106bの所定の記憶領域に格納してもよい。なお、同じ生物種における類似する複数の塩基配列情報の標的遺伝子のコード領域、または、転写領域に対応する部位から、予め定めた塩基数の共通な部分塩基配列情報を作成してもよい。

さらに、ステップSA-1において、部分塩基配列作成部102aは、オーバーハング部位含有塩基配列作成部102kの処理により、オーバーハング部位を含む部分塩基配列情報を作成してもよい。具体的には、例えば、部分塩基配列作成部102aは、オーバーハング部位含有塩基配列作成部102kの処理により、

オーバーハング部位が含まれていることを表すオーバーハング部位含有情報が付加された部分塩基配列情報を作成し、作成された部分塩基配列情報とオーバーハング部位含有情報と相互に関連付けて部分塩基配列ファイル 1 0 6 b の所定の記憶領域に格納してもよい。

- 5      なお、上述の予め定めた塩基数の上限は、オーバーハング部位を含まない場合は、好ましくは 2 8 以下、より好ましくは 2 2 以下、さらに好ましくは 2 0 以下であり、オーバーハング部位を含む場合は、好ましくは 3 2 以下、より好ましくは 2 6 以下、さらに好ましくは 2 4 以下である。また、予め定めた塩基数の下限は、オーバーハング部位を含まない場合は、好ましくは 1 3 以上、より好ましくは 1 6 以上、さらに好ましくは 1 8 以上であり、オーバーハング部位を含む場合は、好ましくは 1 7 以上、より好ましくは 2 0 以上、さらに好ましくは 2 2 以上である。そして、最も好ましい予め定めた塩基数は、オーバーハング部位を含まない場合は、1 9 であり、オーバーハング部位を含む場合は、2 3 である。

- 15      ついで、塩基配列処理装置 1 0 0 は、3' 末端塩基判定部 1 0 2 b の処理により、ステップ S A - 1 にて作成された部分塩基配列情報の 3' 末端の塩基がアデニン、チミン、または、ウラシルであるか否かを判定し、判定した結果を判定結果ファイル 1 0 6 c の所定の記憶領域に格納する（ステップ S A - 2）。具体的には、例えば、塩基配列処理装置 1 0 0 は、3' 末端塩基判定部 1 0 2 b の処理により、ステップ S A - 1 にて作成された部分塩基配列情報の 3' 末端の塩基がアデニン、チミン、または、ウラシルであるときには「1」を、そうでないときには「0」を判定結果ファイル 1 0 6 c の所定の記憶領域に格納してもよい。

- 25      ついで、塩基配列処理装置 1 0 0 は、5' 末端塩基判定部 1 0 2 c の処理により、ステップ S A - 1 にて作成された部分塩基配列情報の 5' 末端の塩基がグアニン、または、シトシンであるか否かを判定し、判定した結果を判定結果ファイル 1 0 6 c の所定の記憶領域に格納する（ステップ S A - 3）。具体的には、例えば、塩基配列処理装置 1 0 0 は、5' 末端塩基判定部 1 0 2 c の処理により、ステップ S A - 1 にて作成された部分塩基配列情報の 5' 末端の塩基がグアニン、または、シトシンであるときには「1」を、そうでないときには「0」を判定結果ファイル 1 0 6 c の所定の記憶領域に格納してもよい。

ついで、塩基配列処理装置 100 は、特定塩基含有判定部 102 d の処理により、ステップ S A - 1 にて作成された部分塩基配列情報の 3' 末端の 7 塩基からなる塩基配列情報が、アデニン、チミン、および、ウラシルからなる群より選ばれる 1 種または 2 種以上の塩基がリッチな塩基配列情報であるか否かを判定し、判定した結果を判定結果ファイル 106 c の所定の記憶領域に格納する（ステップ S A - 4）。具体的には、例えば、塩基配列処理装置 100 は、特定塩基含有判定部 102 d の処理により、ステップ S A - 1 にて作成された部分塩基配列情報の 3' 末端の 7 塩基からなる塩基配列情報に含まれる、アデニン、チミン、および、ウラシルからなる群より選ばれる 1 種または 2 種以上の塩基の数を判定結果ファイル 106 c の所定の記憶領域に格納してもよい。ステップ S A - 4 における判定の規則は、ステップ S A - 1 にて作成された部分塩基配列情報の 3' 末端近傍の塩基配列情報がアデニン、チミン、および、ウラシルからなる群より選ばれる 1 種または 2 種以上の塩基がリッチな塩基配列情報であることを規定しており、具体的に検索を行う際の一指標として 3' 末端から 7 塩基の範囲内の塩基配列情報がアデニン、チミン、および、ウラシルからなる群より選ばれる 1 種または 2 種以上の塩基がリッチな塩基配列情報であることを規定している。

ここで、ステップ S A - 4 において、「リッチな塩基配列情報」は、上述の＜1＞RNA 干渉の標的塩基配列検索方法に記述されている「リッチな配列」であり、具体的には、例えば、ステップ S A - 1 にて作成された部分塩基配列情報が 19 塩基程度からなる場合、当該部分塩基配列情報の 3' 末端の 7 塩基からなる塩基配列情報が、アデニン、チミン、および、ウラシルからなる群より選ばれる 1 種または 2 種以上の塩基が少なくとも好ましくは 3 塩基以上、より好ましくは 4 塩基以上、特に好ましくは 5 塩基以上含まれる塩基配列情報である。

また、ステップ S A - 2 からステップ S A - 4 において、オーバーハング部位を含む部分塩基配列情報を判定する場合、部分塩基配列情報のオーバーハング部位を除いた配列部位を判定対象として判定する。

ついで、塩基配列処理装置 100 は、規定配列選択部 102 e の処理により、ステップ S A - 2、ステップ S A - 3、および、ステップ S A - 4 にて判定された結果に基づいて、ステップ S A - 1 にて作成された部分塩基配列情報から標的

遺伝子に特異的にRNA干渉を生じさせる規定配列情報を選択し、規定配列ファイル106dの所定の記憶領域に格納する（ステップSA-5）。

具体的には、例えば、塩基配列処理装置100は、規定配列選択部102eの処理により、ステップSA-2にて3'末端の塩基がアデニン、チミン、または、  
5 ウラシルであると判定され、ステップSA-3にて5'末端の塩基がグアニン、または、シトシンであると判定され、かつ、ステップSA-4にて部分塩基配列情報の3'末端の7塩基からなる塩基配列情報が、アデニン、チミン、および、ウラシルからなる群より選ばれる1種または2種以上の塩基がリッチな塩基配列情報であると判定された部分塩基配列情報を規定配列情報として選択し、規定配列ファイル106dの所定の記憶領域に格納する。ここで、具体的には、例えば、塩  
10 基配列処理装置100は、規定配列選択部102eの処理により、ステップSA-2、ステップSA-3、および、ステップSA-4にて出力される数値の積を算出し、当該積の値に基づいて、ステップSA-1にて作成された部分塩基配列情報から規定配列情報を選択してもよい。

15 ここで、塩基配列処理装置100は、オーバーハング部位付加部102fの処理により、ステップSA-5にて選択された規定配列情報の少なくとも一方の末端にオーバーハング部位を付加して、規定配列ファイル106dの所定の記憶領域に格納してもよい。具体的には、例えば、塩基配列処理装置100は、オーバーハング部位付加部102fの処理により、規定配列ファイル106dの規定配  
20 列情報の項に記憶されている規定配列情報を、少なくとも一方の末端にオーバーハング部位が付加された規定配列情報に書き換えてもよい。なお、例えば、ターゲット側を検索する場合は、規定配列情報の両末端にオーバーハング部位を付加してもよい。

25 なお、上述のオーバーハング部位の塩基数は、上述の<2>RNA干渉を生じさせるポリヌクレオチドの塩基配列設計方法に記述されている塩基数であり、具体的には、例えば、2が特に好適である。

また、塩基配列処理装置100は、同一類似塩基配列検索部102gの処理により、ステップSA-5にて選択された規定配列情報と同一または類似の塩基配列情報を、他の塩基配列情報（例えばNCBIのRefSeqなどの公的データ



ベースで公開されている塩基配列情報) から、例えばBLAST、FASTA、  
searchなどの既存のホモロジー検索手法を用いて検索し、無関係遺伝子  
標的評価部102hにて行われる無関係遺伝子標的評価処理により、検索された  
同一または類似の塩基配列情報に基づいて、規定配列情報が標的遺伝子とは無関  
5 係の遺伝子を標的にするか否かを評価してもよい。

具体的には、例えば、塩基配列処理装置100は、同一類似塩基配列検索部1  
02gの処理により、ステップSA-5にて選択された規定配列情報と同一または  
類似の塩基配列情報を、他の塩基配列情報(例えばNCBIのRefSeqな  
どの公的データベースで公開されている塩基配列情報) から、例えばBLAST、  
10 FASTA、searchなどの既存のホモロジー検索手法を用いて検索し、  
無関係遺伝子標的評価部102hは、総和算出部102mの処理により、検索さ  
れた同一または類似の塩基配列情報のうち標的遺伝子とは無関係の遺伝子の塩基  
配列情報の総数、および、標的遺伝子とは無関係の遺伝子の塩基配列情報に付さ  
れた同一類似の度合いを示す値(例えばBLAST、FASTAおよびs  
15 earchの場合は、「E value」)に基づいて、同一類似の度合いを示す値の  
逆数の総和を算出し、無関係遺伝子標的評価部102hは、総和基準評価部10  
2nの処理により、算出された総和に基づいて、規定配列情報が標的遺伝子とは  
無関係の遺伝子を標的にするか否かを評価してもよい。

ここで、無関係遺伝子標的評価部102hにて行われる無関係遺伝子標的評価  
20 処理の詳細について図24を参照して説明する。

図24は、本実施形態における本システムの無関係遺伝子標的評価処理の一例  
を示すフローチャートである。

まず、塩基配列処理装置100は、同一類似塩基配列検索部102gの処理に  
より、ステップSA-5にて選択された規定配列情報と同一または類似の塩基配  
25 列情報を、他の塩基配列情報(例えばNCBIのRefSeqなどの公的データ  
ベースで公開されている塩基配列情報) から、例えばBLAST、FASTA、  
searchなどの既存のホモロジー検索手法を用いて検索し、規定配列情報  
の識別情報(図19における「部分塩基配列識別情報」と、検索された同一また  
は類似の塩基配列情報の識別情報(図19における「参照配列識別情報」と、検

索された同一または類似の塩基配列情報に付された同一類似の度合いを示す値（例えばBLAST、FASTAおよびsssearchの場合は、「E value」）（図19における「同一類似度」）とを相互に関連付けて、同一類似度ファイル106fの所定の記憶領域に格納する。

- 5 ついで、無関係遺伝子標的評価部102hは、総和算出部102mの処理により、検索された同一または類似の塩基配列情報のうち標的遺伝子とは無関係の遺伝子の塩基配列情報の総数、および、標的遺伝子とは無関係の遺伝子の塩基配列情報に付された同一類似の度合いを示す値（例えばBLAST、FASTAおよびsssearchの場合は、「E value」）に基づいて、同一類似の度合い
- 10 を示す値の逆数の総和を算出し、規定配列情報の識別情報（図20における「部分塩基配列識別情報」）と算出された総和（図20における「総和」）とを相互に関連付けて、評価結果ファイル106gの所定の記憶領域に格納する（ステップSB-1）。

- 15 ついで、無関係遺伝子標的評価部102hは、総和基準評価部102nの処理により、ステップSB-1にて算出された総和に基づいて（例えば、ステップSB-1にて算出された総和の大小などに基づいて）、規定配列情報が標的遺伝子とは無関係の遺伝子を標的にするか否かを評価し、評価結果（図20における「非標的」および「標的」）を評価結果ファイル106gの所定の記憶領域に格納する（ステップSB-2）。

- 20 これにて、メイン処理が終了する。

#### <8>医薬用組成物

- 25 本発明はまた、医薬的に有効な量の本発明のポリヌクレオチドを含む、医薬用組成物を提供する。本発明の医薬用組成物の用途は特に限定されず、有効成分たる各ポリヌクレオチドの標的配列を含む遺伝子の発現をRNAiにより抑制するため、これらの遺伝子が関与する疾患の予防および／または治療に有用である。

本発明の医薬用組成物に含まれるポリヌクレオチドの標的となる配列は、前述の（a）－（f）の規則を満たす規定配列として、選択された配列である。好ましくは、配列番号47～配列番号817081のいずれであってよい。特に、当該標的配列が標的遺伝子に高い特異性を有する配列であれば、ポリヌクレオチド

が当該標的配列を含む標的遺伝子に対してのみ選択的に発現抑制効果を奏しそれ以外の遺伝子に対しては発現抑制を生じさせない（すなわち、オフターゲット効果がより低い）ので、副作用の影響等を低減できる。したがって、ポリヌクレオチドの標的配列は、標的遺伝子に特異性が高いことがより好ましく、前述の（a）

5    ー（f）の規則を満たす規定配列として、選択された配列（例えば、配列番号47～配列番号817081）の中でも、よりオフターゲット効果を低減可能な配列であることが好ましい。好ましい標的遺伝子の規定配列として、他の遺伝子の塩基配列とのミスマッチ数が少なくとも3塩基であり、かつ、少なくとも3塩基のミスマッチを有する塩基配列を有するその他の遺伝子の数が最も少ない配列を

10    選択することができる。「その他の遺伝子の数が最も少ない」とは、「少なくとも3塩基のミスマッチを有する塩基配列を有するその他の遺伝子」、即ち類似する遺伝子、ができるだけ存在しないこと、例えば、好ましくは10個以内、より好ましくは6個以内、さらにより好ましくは1個のみ存在する、あるいは、最も好ましくは全く存在しない、ことを意味する。

15    例えば、配列番号47～配列番号817081の中から、他の遺伝子の塩基配列とのミスマッチ数が3塩基であり（言い換えれば、19塩基からなる規定配列のうち当該ミスマッチ3塩基以外の16塩基が一致する）、かつ、3塩基のミスマッチを有する塩基配列を有するその他の遺伝子の数が最も少ない配列を選択して得られたのが、図46に示す53998種の配列である。よって、これらの配列

20    のいずれかであることが特に好ましい。これらの配列について、当該標的配列を含む遺伝子、当該遺伝子の関連する疾患名、当該遺伝子の遺伝子オントロジーにおけるGO\_\_IDに係る生物学的機能カテゴリー、文献に基づく生物学的機能等の関係はその大半が明らかにされている。図46にこれらの関係を明らかにした。本発明のポリヌクレオチドは、標的配列を含む遺伝子の発現をRNAiにより抑

25    制するため、当該遺伝子の関連疾患の治療および／または予防、生物学的機能の調節が可能である。当業者は、本明細書、図面等の開示に基づき、ポリヌクレオチドの標的配列が明らかになれば当該ポリヌクレオチドが効果を奏しうる、疾患および／または生物学的機能を容易に把握することが可能である。

よって、本発明の医薬組成物は好ましくは、図46の関連疾患名の欄に記載の

疾患、あるいは、図 4 6 の生物学的機能カテゴリーおよび／または文献に基づく生物学的機能の欄に記載された遺伝子に関連する生物学的機能に係る疾患を治療および／または予防するために有用である。

本発明の医薬組成物はより好ましくは、以下 1) - 9) のいずれかに属する遺

5 伝子が関与する疾患を治療および／または予防するために有用である、

1) アポトーシスに関与している遺伝子；

2) ホスファターゼおよびホスファターゼ活性に関与している遺伝子；

3) 細胞周期に関与している遺伝子；

4) レセプターに関与している遺伝子；

10 5) イオンチャネルに関与している遺伝子；

6) シグナル伝達系に関与している遺伝子；

7) キナーゼおよびキナーゼ活性に関与している遺伝子；

8) 転写制御に関与している遺伝子；あるいは

9) Gタンパク質共役レセプターまたはGタンパク質共役レセプターに関与し

15 ている遺伝子。

図 4 6 の「生物学的機能カテゴリー」の欄は上記 9 つのカテゴリーに分類した生物学的機能を記載した。上記 1) - 9) の各グループに属する遺伝子が、より詳細にどのような生物学的機能を有するかについて、図 3 7 - 図 4 5 に各遺伝子と遺伝子オントロジーにおける GO\_ID との関係を示した。図 3 7 - 図

20 4 5 に記載の 7 桁の数値は各グループに属する遺伝子オントロジーでの属性（具体的には、ID 番号）を示す。

遺伝子オントロジーについては、例えば、Gene Ontology Consortium、"Gene Ontology Consortium ホームページ"、[online]、1999 年、Gene Ontology Consortium、[平成 16 年 10 月 25 日検索]、インターネット<URL: <http://www.geneontology.org/>>を参照されたい。

遺伝子オントロジーには、例えば、「signal transducer activity (GO:0004871)」「receptor activity (GO:0004872)」のような遺伝子の属性が定義されており、さ

らに「receptor activityという属性は、signal transducer activityという属性を受け継ぐ」というような属性間の継承関係が定義されている。属性の定義および属性間の継承関係は、ジェーン・オントロジー・コンソシアム：Gene Ontology Consortium (<http://www.geneontology.org/>) より入手可能である。また、ヒトやマウスの各遺伝子と、Gene Ontologyの属性との対応関係は、キャンサー・ゲノム・アナトミー・プロジェクト：Cancer genome Anatomy project (<http://cgap.nci.nih.gov/>) 等各種データベースより入手可能である。

5 遺伝子のGene Ontologyとの対応データから、例えばヒトZYX遺伝子（NM\_003461）はreceptor activityを持つことがわかり、さらに属性間の継承関係を用いて、ZYX遺伝子は同時にsignal transducer activityをもつことを導くことができる。

遺伝子オントロジーでは、遺伝子の属性（annotation）について、

15 各属性の定義や属性間の継承関係の定義がされている。この遺伝子のオントロジーにおける属性間の継承関係は、非循環有向グラフ（DAG）を形成する。遺伝子オントロジーでは、「遺伝子の機能（molecular function）」、「生物学的現象（biological process）」、「細胞内局在（cellular component）」により遺伝子を分類・整理している。そして、各分類方法において、属性間の継承関係が定義されている。遺伝子オントロジーにおける属性のID番号がわかれば、当業者は当該番号から各属性の内容を把握することが可能である。

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また、図46では、上記の遺伝子オントロジーに係る9つの生物学的機能カテゴリーの他に、文献から取得された各遺伝子の生物学的機能情報についても記載している。具体的には、「文献に基づく生物学的機能」の欄に、PubMedから

25 取得される文献に基づいた各遺伝子の生物学的機能情報を記載した。

さらに好ましい態様において、本発明の医薬組成物は、より好ましくは図46の配列番号（ヒト）または配列番号（マウス）の欄に記載の配列番号のいずれかの塩基配列を標的配列とするポリヌクレオチドを含む。各ポリヌクレオチドは、

標的配列の記載された整理番号と同じ整理番号の「関連疾患名」の欄に記載された疾患の治療および／または予防に有用である。あるいは、同じ整理番号の「生物学的機能カテゴリー」または、「文献に基づく生物学的機能」の欄に記載された生物学的機能の調節、(例えば、抑制および促進)、当該生物学的機能の関与する疾患の治療および／または予防に有用である。

5 本明細書において後述する実施例 8 の表 1 は、本発明のポリヌクレオチド、具体的には、かかるポリヌクレオチドに相当する s i R N A のセンス鎖 (表 1 中の「s i R N A - センス」の欄に塩基配列を記載)、アンチセンス鎖 (表 1 中の「s i R N A - アンチセンス」の欄に塩基配列を記載：ただし、ここでは 3' から 5' 10 方向に配列を示す)、当該 s i R N A の R N A i 対象となる標的遺伝子 (表 1 中の「遺伝子名」の欄に記載) および当該遺伝子における標的配列の位置を示している。表 1 に示されたように、本発明のポリヌクレオチドは、s i R N A - センスまたは s i R N A - アンチセンスとして、表 1 の「遺伝子名」の欄に記載された遺伝子に対して R N A i 効果を生じさせ、それにより、当該遺伝子の発現を有意 15 に抑制した。よって、本発明のポリヌクレオチドを含む医薬組成物は、表 1 の「遺伝子名」の欄に記載された遺伝子に関連する疾患、具体的には、図 4 6 の「関連疾患名」の欄に記載した当該遺伝子に対応する疾患や、図 4 6 の「生物学的機能カテゴリー」の欄および／または「文献に基づく生物学的機能」の欄に記載した当該遺伝子に対応する生物学的機能に関連する疾患を治療または予防するために 20 有用である。

実施例 8 において s i R N A の標的とした配列 (表 1 の「標的配列」の欄参照) は、本発明にかかるポリヌクレオチドの標的となる標的配列のうち、図 4 6 に示す 5 3 9 9 8 種の標的配列の中から無作為に選択したものである。後述するように、ここでは選択した全ての標的配列において、R N A i 効果が確認された。こ 25 のように得られた実施例 8 での結果を統計学の「母比率を推定する方法」に基づき処理したところ、本発明にかかるポリヌクレオチド、具体的には、配列番号 4 7 ~ 8 1 7 0 8 1 に示す標的遺伝子の規定配列と相同な配列を 2 本鎖領域の一方の鎖に含むポリヌクレオチド) が標的遺伝子の発現抑制効果を示すということは統計的に妥当であり、かつ、特に、前記規定配列が図 4 6 に示す 5 3 9 9 8 種の

配列のいずれかであるポリヌクレオチドを用いた場合には、そのほぼ全てが標的遺伝子の発現抑制効果を示すということは統計的に妥当である、ということが明らかになった。

本発明にかかるポリヌクレオチドの標的となる遺伝子は、図4 6記載の疾患の  
5 いずれに関連するものであってもよいが、特に、膀胱癌、乳癌、結腸直腸癌、胃癌、肝細胞癌、肺癌、黒色腫、卵巣癌、膵癌、前立腺癌、口腔癌、皮膚癌、甲状腺癌を含む各種癌に関連した遺伝子であると、当該遺伝子の発現抑制効果によって、これらの各種癌を治療または予防することが可能となる。したがって、限定されるわけではないが、本発明の医薬組成物は、これらから選択される、いずれ  
10 かの癌を治療または予防するために有用である。

本発明の医薬組成物は、最も好ましくは、配列番号8 1 7 1 0 2ないし8 1 7  
6 5 1のいずれかの塩基配列を有するポリヌクレオチドを含む。各ポリヌクレオチドは、標的となる遺伝子（表1の「遺伝子名」の欄参照）の発現を抑制することができるため、当該遺伝子に関連する疾患（具体的には、当該遺伝子に関する  
15 図4 6の「関連疾患」の欄参照）や、当該遺伝子の生物学的機能（具体的には、当該遺伝子に関する図4 6の「生物学的機能カテゴリー」および／または「文献に基づく生物学的機能」の欄参照）に関連する疾患の治療および／または予防に有用である。これらの配列番号の塩基配列に対して上述したようなミスマッチ等の変異を有する配列も、RNA i効果を損なわない範囲において、利用可能である。  
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後述の実施例1～8において、本発明にかかる選択方法に従って選択された多数のポリヌクレオチドが有意なRNA i効果を示すことが実証された。よって、共通する規則に従って選択されたポリヌクレオチドが同様のRNA i効果を示すことは当業者にとって容易に理解される。また、当該規則の有効性は、前述の統計的な処理結果からも明らかである。したがって、例えば、表1記載の遺伝子において、具体的に開示された標的配列の標的位置とは異なる位置から、開示された標的配列とは異なる配列を、本発明に従って同じ遺伝子中から選択すれば、同じ遺伝子に対して同様の遺伝子発現抑制効果が得られることは容易に理解される。さらに、ある疾患に関与する遺伝子の発現の抑制効果が示されれば、本発明

に従って標的配列を選択してポリヌクレオチドを作成すれば、同じ疾患に關与する他の遺伝子についても、発現の抑制効果に基づく疾患の治療および／または予防が容易に理解される。

さらに、本発明の実施例 7 は、標的配列と完全に相同な配列を含む遺伝子以外の他の遺伝子であっても、当該他の遺伝子が少数、好ましくは 2 塩基以下の mismatches を有する類似配列を含む場合、当該類似配列部分が RNA 干渉の標的となりうることを示した。よって、標的配列と完全に相同な配列を含む遺伝子以外の、類似配列を含む他の遺伝子も、本発明のポリヌクレオチドの標的対象となり RNA 干渉に基づく発現抑制効果が期待される。よって、本発明の医薬組成物はこれらの遺伝子の關与する疾患に対する治療・予防のためにも有用である。

RNA i を生じさせるポリヌクレオチドを医薬組成物に利用する場合には、製薬上許容されうる担体または希釈剤と本発明にかかるポリヌクレオチドとを配合して医薬組成物として用いてもよい。この場合の有効成分の担体または希釈剤に対する割合は、約 0.01 ~ 約 99.9 重量%の間である。

上記の担体または希釈剤は、気体、液体、固体であってもよい。例えば、担体は、水性またはアルコール性の液剤や懸濁剤、油性の液剤や懸濁剤、水中油型や油中水型乳剤、疎水性担体、液体ビヒクル、微結晶等であってもよい。

また、上記ポリヌクレオチドを含む本発明の医薬組成物は、例えば、他の治療用薬剤、界面活性剤、充填剤、緩衝剤、分散化剤、抗酸化剤、保存剤の少なくとも 1 つをさらに含んでもよい。このような医薬組成物は、経口、口内、肺内、直腸内、子宮内、腫瘍内、頭蓋内、鼻用、筋肉内、皮下、血管内、鞘内、経皮、皮内、関節内、腔内、接眼用、腔用、眼用、静脈内、腺内、組織内、リンパ管内、埋め込み型、吸入型、徐放用、及び腸溶性被覆の製剤であってよい。

例えば、ポリヌクレオチドを用いた経口製剤は、粉末剤、糖衣丸剤、タブレット、カプセル剤、シロップ剤、エアゾール剤、液剤、懸濁剤、水中油型や油中水型乳剤である乳剤であってもよい。また、局所製剤であって、担体が、クリーム剤、ゲル剤、軟膏剤、シロップ剤、エアゾール剤、パッチ剤、液剤、懸濁剤、乳剤であってもよい。また、注射用製剤や経皮用製剤であって、担体が、水性及びアルコール性の液剤や懸濁剤、油性の液剤や懸濁剤、水中油型や油中水型乳剤で



あってもよい。また、直腸用製剤、坐剤であってもよい。また、インプラント、カプセル又はカートリッジで供給される製剤、呼吸用又は吸入用製剤、エアゾール剤であってもよい。

このようなポリヌクレオチドを用いた医薬組成物の投与量は、患者の症状、年齢、体重等によって適宜選択される。また、被導入体への投与方法として、被導入体が細胞や組織の場合は、カルシウムフォスフェート法、エレクトロポレーション法、リポフェクション法、ウィルス感染、ポリヌクレオチド溶液浸漬法等が用いられ、また、胚に導入する場合は、マイクロインジェクション法やエレクトロポレーション法やウィルス感染等が用いられる。投与には、従来から用いられている市販の試薬、器機、装置、キット等を用いてもよく、例えば、TransIT（登録商標）-In Vivo Gene Delivery SystemやTransIT（登録商標）-QR Hydrodynamic Delivery Solution（ともにタカラバイオ株式会社製）等の導入試薬を用いて生体内細胞への投与を行ってもよい。また、ウィルス感染による方法としては、レトロウィルスベクター（例えば、BD Biosciences Clontech社製のRNAi Ready pSIREN-RetroQ Vector等）や、アデノウィルスベクター（例えば、同社製のBD Knockout Adenoviral RNAi System等）や、レンチウィルスベクター（例えば、タカラバイオ株式会社製のレトロネクチン等）を用いてもよい。

被導入体が植物の場合には、植物体の体腔又は間質細胞等への注入又は噴霧による方法等が用いられる。また、被導入体が動物個体の場合には、経口、非経口、経膣、経直腸、経鼻、経眼、腹膜内投与等の方法が用いられる。このような投与方法によって、1種又は2種以上のポリヌクレオチドが、同時又は時期をずらし、全身又は局所的に投与される。経口投与の例として、例えば、ポリヌクレオチドを導入した薬剤または食品を直接摂取してもよい。また、経口、経鼻投与の例として、例えば、吸入装置を用いて投与を行ってもよい。また、非経口投与の例として、例えば、針あり又は針なしの注射器を用いて、皮下、筋肉内、静脈内等へ投与を行ってもよい。

### ＜ 9 ＞ 遺伝子発現抑制用組成物

本発明はさらに、本発明のポリヌクレオチドを含む、標的遺伝子の発現を抑制するための遺伝子発現抑制用組成物を提供する。

本発明において明らかにされたように、本発明のポリヌクレオチドは各標的配  
5 列を含む遺伝子に対して発現抑制効果を奏する。当該遺伝子の発現抑制により、  
当該遺伝子の生物学的機能が調節、好ましくは抑制される。

好ましくは、標的遺伝子は、図 4 6 の関連疾患名の欄に記載の疾患のいずれかの疾患に関連する。

好ましくは、標的遺伝子は、図 4 6 の遺伝子名の欄に記載された遺伝子のい  
10 ずれかである。

あるいは、標的遺伝子が、以下 1) - 9) のいずれかに属する遺伝子である、

- 1) アポトーシスに関与している遺伝子；
- 2) ホスファターゼおよびホスファターゼ活性に関与している遺伝子；
- 3) 細胞周期に関与している遺伝子；
- 15 4) レセプターに関与している遺伝子；
- 5) イオンチャネルに関与している遺伝子；
- 6) シグナル伝達系に関与している遺伝子；
- 7) キナーゼおよびキナーゼ活性に関与している遺伝子；
- 8) 転写制御に関与している遺伝子；あるいは
- 20 9) Gタンパク質共役レセプターまたはGタンパク質共役レセプターに関与している遺伝子。

上記医薬組成物の項において前述したように、本発明にかかるポリヌクレオチド（具体的には siRNA）は、RNAi 効果を生じることが実施例 8 の結果および統計的処理結果から明らかである。特に、後述の実施例 8 では、本発明の  
25 ポリヌクレオチドが、表 1 の遺伝子名の欄に記載された全ての遺伝子に関して mRNA の発現抑制効果（すなわち RNAi 効果）を奏することが確認された。よって、本発明のポリヌクレオチドを含む遺伝子発現抑制用組成物は、図 4 6 に示す標的遺伝子のいずれを標的としてもよいが、より好ましくは、標的遺伝子が、表 1 の遺伝子名の欄に記載された遺伝子のいずれかである。表 1 の各遺伝子に対し

ては、好ましくは、同じ行に記載の s i R N A -センスまたは s i R N A -アンチセンスの配列を使用することが望ましい。これらの塩基配列に対して上述したようなミスマッチ等の変異を有する配列も、発現抑制効果を損なわない範囲において、利用可能である。

5 標的遺伝子が表 1 の遺伝子のいずれかであれば、当該遺伝子に関連する疾患(具体的には、当該遺伝子に関する図 4 6 の「関連疾患」の欄参照)や、当該遺伝子の生物学的機能(具体的には、当該遺伝子に関する図 4 6 の「生物学的機能カテゴリー」および/または「文献に基づく生物学的機能」の欄参照)に関連する疾患の治療および/または予防に有用である。

10 例えば、本発明にかかる遺伝子発現抑制用組成物の標的となる遺伝子は、図 4 6 記載の疾患のいずれに関連するものであってもよいが、特に、膀胱癌、乳癌、結腸直腸癌、胃癌、肝細胞癌、肺癌、黒色腫、卵巣癌、膵癌、前立腺癌、口腔癌、皮膚癌、甲状腺癌を含む各種癌に関連した遺伝子であると、当該遺伝子の発現抑制効果によって、これらの各種癌を治療または予防することが可能となる。したがって、限定されるわけではないが、本発明の医薬組成物は、これらから選択される、いずれかの癌を治療または予防するために有用である。

本明細書において後述する実施例 2 - 5 では、ヒトピメンチン、ルシフェラーゼ、SARS ウイルス等の遺伝子に対する本発明のポリヌクレオチドの RNA i 効果を、mRNA の対照に対する相対的発現量で調べた。図 3 1、3 2 および 3 5 は、mRNA の発現量を定量 PCR で測定した結果が示されている。mRNA の相対発現量は図 3 1、3 2 および 3 5 において各々、約 7 - 8 % (実施例 2、図 3 1)、約 1 2 - 1 3 % (実施例 3、図 3 2)、数%ないし約 1 5 %未満 (実施例 5、図 3 5) と減少し、各遺伝子の発現抑制効果が確認された。また実施例 4 の図 3 4 は、RNA i 効果としての mRNA の発現量をルシフェラーゼ活性で調べた結果であるが、同様に、対照と比較して数%ないし約 2 0 %未満に減少した。

さらに、実施例 8 では、関連疾患や生物学的機能が明らかとなった図 4 6 に示す遺伝子のうち、無作為に選択した約 3 0 0 種の遺伝子について、ヒト由来 HeLa 細胞での mRNA の発現量を相対的発現量で調べた。表 1 で示したように、当該遺伝子の発現抑制効果、すなわち RNA i 効果を評価するために算出した後

述のRQ値は、全て1未満であり、ほぼ全てが0.5未満であった。

本発明の遺伝子発現抑制用組成物において、「標的遺伝子の発現抑制」とは、標的遺伝子のmRNA発現量が実質的に減少することを意味する。mRNA発現量が実質的に減少していれば、その変化の幅の大小にかかわらず、発現抑制が実現  
5 されている。上記のような実施例2-5および実施例8の結果をふまえると、本発明の遺伝子発現抑制組成物は、標的遺伝子のmRNA発現量を好ましくは少なくとも50%以下に減少させることが明らかである。

#### <10>治療または予防方法

本発明はさらに、医薬的に有効な量の、本発明のポリヌクレオチドを投与する  
10 ことを含む、図46の関連疾患名の欄に記載の疾患を治療または予防するための方法。

#### [他の実施の形態]

さて、これまで本発明の実施の形態について説明したが、本発明は、上述した実施の形態以外にも、請求の範囲に記載した技術的思想の範囲内において種々の  
15 異なる実施の形態にて実施されてよいものである。

例えば、塩基配列処理装置100がスタンドアローンの形態で処理を行う場合を一例に説明したが、塩基配列処理装置100とは別筐体で構成されるクライアント端末からの要求に応じて処理を行い、その処理結果を当該クライアント端末に返却するように構成してもよい。具体的には、例えば、クライアント端末はR  
20 NA干渉の標的遺伝子の名称（例えば遺伝子名、アクセッション番号など）または標的遺伝子に係る塩基配列情報を塩基配列処理装置100に送信し、塩基配列処理装置100は当該名称に対応する塩基配列情報またはクライアント端末より送信された塩基配列情報に対して制御部102で行われる上述した各処理を行い、標的遺伝子に特異的にRNA干渉を生じさせる規定配列情報を選択してク  
25 ライアント端末に送信してもよい。この場合、例えば、クエリーの遺伝子に対して公共データベースから配列情報を取得してsiRNAを選択してもよく、また、例えば、予め全遺伝子のsiRNAを計算して記憶しておき、クライアント端末からの要求（遺伝子の名称またはアクセッション番号など）に対して即座にsiRNAを選択し、選択したsiRNAをクライアント端末に返してもよい。

また、塩基配列処理装置 100 は、標的遺伝子とは無関係の遺伝子に対する規定配列情報の特異性を確認してもよい。これにより、標的とする遺伝子だけに特異的に RNA 干渉を生じさせる規定配列情報を選出することができる。

5      また、クライアント端末と塩基配列処理装置 100 とで構成される本システムには、例えば、Web ページの利用者から、siRNA の RNA 干渉効果（例えば、「効く」、「効かない」など）の結果を Web 上でフィードバックしてもらい、利用者からフィードバックされた実験例を塩基配列処理装置 100 に蓄積し、上述した RNA 干渉に有効な siRNA の配列規則性を改善するためのインターフェース機能を導入してもよい。

10      また、塩基配列処理装置 100 は、規定配列情報から siRNA のセンス鎖の塩基配列情報および当該センス鎖と相補的（complementary）なアンチセンス鎖の塩基配列情報を計算してもよい。具体的には、例えば、塩基配列処理装置 100 は、上述した各処理の結果、規定配列の両端に各 2 塩基のオーバーハング部を付加した 23 塩基の配列情報として「c a c c c t g a c c c g c  
15      t t c g t c a t g g」を選択した場合、センス鎖の塩基配列情報「5' - C C C U G A C C C G C U U C G U C A U G G - 3'」およびアンチセンス鎖の塩基配列情報「5' - A U G A C G A A G C G G G U C A G G G U G - 3'」を計算する。これにより、ポリヌクレオチドを発注する時にセンス鎖、アンチセンス鎖を手作業でまとめる必要がなくなり、利便性が高まる。

20      また、実施形態において説明した各処理のうち、自動的に行なわれるものとして説明した処理の全部または一部を手動的に行うこともでき、あるいは、手動的に行なわれるものとして説明した処理の全部または一部を公知の方法で自動的に行うこともできる。

25      この他、上記文書中や図面中で示した処理手順、制御手順、具体的名称、各種の登録データや検索条件等のパラメータを含む情報、画面例、データベース構成については、特記する場合を除いて任意に変更することができる。

また、塩基配列処理装置 100 に関して、図示の各構成要素は機能概念的なものであり、必ずしも物理的に図示の如く構成されていることを要しない。

例えば、塩基配列処理装置 100 の各部または各装置が備える処理機能、特に

制御部 102 にて行なわれる各処理機能については、その全部または任意の一部を、CPU (Central Processing Unit) および当該 CPU にて解釈実行されるプログラムにて実現することができ、あるいは、ワイヤードロジックによるハードウェアとして実現することも可能である。なお、プログラムは、後述する記録媒体に記録されており、必要に応じて塩基配列処理装置 100 に機械的に読み取られる。

すなわち、ROM または HD などの記憶部 106 などには、OS (Operating System) と協働して CPU に命令を与え、各種処理を行うためのコンピュータプログラムが記録されている。このコンピュータプログラムは、RAM 等にロードされることによって実行され、CPU と協働して制御部 102 を構成する。また、このコンピュータプログラムは、塩基配列処理装置 100 に対して任意のネットワーク 300 を介して接続されたアプリケーションプログラムサーバに記録されてもよく、必要に応じてその全部または一部をダウンロードすることも可能である。

また、本発明にかかるプログラムを、コンピュータ読み取り可能な記録媒体に格納することもできる。ここで、この「記録媒体」とは、フレキシブルディスク、光磁気ディスク、ROM、EPROM、EEPROM、CD-ROM、MO、DVD、フラッシュディスク等の任意の「可搬用の物理媒体」や、各種コンピュータシステムに内蔵される ROM、RAM、HD 等の任意の「固定用の物理媒体」、あるいは、LAN、WAN、インターネットに代表されるネットワークを介してプログラムを送信する場合の通信回線や搬送波のように、短期にプログラムを保持する「通信媒体」を含むものとする。

また、「プログラム」とは、任意の言語や記述方法にて記述されたデータ処理方法であり、ソースコードやバイナリコード等の形式を問わない。なお、「プログラム」は必ずしも単一的に構成されるものに限られず、複数のモジュールやライブラリとして分散構成されるものや、OS (Operating System) に代表される別個のプログラムと協働してその機能を達成するものをも含む。なお、実施の形態に示した各装置において記録媒体を読み取るための具体的な構成、読み取り手順、あるいは、読み取り後のインストール手順等については、周知の

構成や手順を用いることができる。

記憶部 106 に格納される各種のデータベース等（標的遺伝子塩基配列ファイル 106a～標的遺伝子アノテーションデータベース 106h）は、RAM、ROM等のメモリ装置、ハードディスク等の固定ディスク装置、フレキシブルディスク、光ディスク等のストレージ手段であり、各種処理やウェブサイト提供に用  
5 いる各種のプログラムやテーブルやファイルやデータベースやウェブページ用ファイル等を格納する。

また、塩基配列処理装置 100 は、既知のパーソナルコンピュータ、ワークステーション等の情報処理端末等の情報処理装置にプリンタやモニタやイメージス  
10 キャナ等の周辺装置を接続し、該情報処理装置に本発明の方法を実現させるソフトウェア（プログラム、データ等を含む）を実装することにより実現してもよい。

さらに、塩基配列処理装置 100 等の分散・統合の具体的形態は明細書および図面に示すものに限られず、その全部または一部を、各種の負荷等に応じた任意の単位で、機能的または物理的に分散・統合して構成することができる（例えば、  
15 グリッド・コンピューティングなど）。例えば、各データベースを独立したデータベース装置として独立に構成してもよく、また、処理の一部を CGI（Common Gateway Interface）を用いて実現してもよい。

また、ネットワーク 300 は、塩基配列処理装置 100 と外部システム 200 とを相互に接続する機能を有し、例えば、インターネットや、イントラネットや、  
20 LAN（有線／無線の双方を含む）や、VANや、パソコン通信網や、公衆電話網（アナログ／デジタルの双方を含む）や、専用回線網（アナログ／デジタルの双方を含む）や、CATV網や、IMT2000方式、GSM方式またはPDC／PDC-P方式等の携帯回線交換網／携帯パケット交換網や、無線呼出網や、Bluetooth等の局所無線網や、PHS網や、CS、BSまたはISDB  
25 等の衛星通信網等のうちいずれかを含んでもよい。すなわち、本システムは、有線・無線を問わず任意のネットワークを介して、各種データを送受信することができる。

#### 実施例

以下、実施例に基づき、本発明についてさらに詳細に説明する。なお、本発明は下記実施例に限定されるものではない。

### [実施例 1]

#### 5 <1>RNAi 効果を測定するための遺伝子、発現ベクター

siRNA による RNAi 効果を測定するための標的遺伝子としてはホタル (*Photinus pyralis*, *P. pyralis*) の luciferase (*luc*) 遺伝子 (*P. pyralis luc* 遺伝子: accession number: U47296) を用い、これを含む発現ベクターとして pGL3-Control ベクター (Promega 社製) を用いた。*P. pyralis luc* 遺伝子断片はこのベクター中で SV40 のプロモーターとポリ A シグナルで挟まれた形になっている。また内部コントロール遺伝子はウミシイタケ (*Renilla reniformis*, *R. reniformis*) の *luc* 遺伝子を用い、これを含む発現ベクターとして pRL-TK (Promega 社製) を用いた。

#### <2>21 塩基 2 本鎖 RNA (siRNA) の合成

21 塩基センス鎖と 21 塩基アンチセンス鎖 RNA (図 9 にしめされている位置のもの; a~p) は、日立計測器サービス株式会社を通じてジェンセット株式会社に合成を委託した。

20 *P. pyralis luc* 遺伝子の発現を阻害するために用いた 2 本鎖 RNA は、センス鎖とアンチセンス鎖とを会合させることで作製した。会合は、センス鎖 RNA とアンチセンス鎖 RNA を、10mM Tris-HCl (pH 7.5), 20mM NaCl 反応液中で 90℃、3 分間加熱し、37℃で 1 時間インキュベートし、その後室温になるまで放置することで行った。2 本鎖ポリヌクレオチドの形成は、TBE 緩衝液中での 2% アガロースゲルでの電気泳動で検定するが、上記条件では殆どすべての 1 本鎖ポリヌクレオチドが 2 本鎖ポリヌクレオチドに会合していた。

#### <3>哺乳類細胞培養法

哺乳類培養細胞としては、ヒトの HeLa 細胞と HEK293 細胞、チャイニ



ーズハムスターのCHO-KI細胞 (RIKEN Cell bank) を用いた。培地はDulbecco's modified Eagle's medium (Gibco BRL社製) に非働化10%牛胎児血清 (Mitsubishi Kasei社製) および抗生物質としてpenicillin (Meiji社製) 10 units/ml、streptomycin (Meiji社製) 50  $\mu$ g/mlを添加したものをを用いた。37℃、5%CO<sub>2</sub>存在下で培養した。

<4>哺乳類培養細胞への標的遺伝子、内部コントロール遺伝子、siRNAの培養細胞へのトランスフェクション

哺乳類細胞は0.2~0.3×10<sup>6</sup> cells/mlの濃度で24穴プレートにまき、1日後にCa-phosphate沈殿法 (細胞工学ハンドブック、黒木登志夫ら編、羊土社(1992)) で1.0  $\mu$ g pGL3-Control DNA、0.5または1.0  $\mu$ g pRL-TK DNA、および0.01、0.1、1、10、100 nMの各siRNAを導入した。

<5>ショウジョウバエ細胞培養法

ショウジョウバエ培養細胞としてはS2細胞 (Schneider, I., et al., J. Embryol. Exp. Morph., 27, 353-365 (1972)) を用いた。培地はSchneider's Drosophila medium (Gibco BRL社製) に非働化10%牛胎児血清 (Mitsubishi Kasei社製) および抗生物質としてpenicillin (Meiji社製) 10 units/ml、streptomycin (Meiji社製) 50  $\mu$ g/mlを添加したものをを用いた。25℃、5%CO<sub>2</sub>存在下で培養した。

<6>ショウジョウバエ培養細胞への標的遺伝子、内部コントロール遺伝子、siRNAの培養細胞へのトランスフェクション

このS2細胞は1.0×10<sup>6</sup> cells/mlの濃度で24穴プレートにまき、1日後にCa-phosphate沈殿法 (細胞工学ハンドブック、黒木登志夫ら編、羊土社(1992)) で1.0  $\mu$ g pGL-3 Control DNA、0.1  $\mu$ g pRL-TK DNA、および0.01、0.1、1、10、100 nMの各siRNAを導入した。

### <7>RNAi効果の測定

siRNAをトランスフェクションした細胞は、トランスフェクション後20時間後に回収し、Dual-Luciferase Reporter Assay System (Promega社製)を用いて、2種類のルシフェラーゼ (P. pyralis lucおよびR. reniformis luc) タンパクの発現量 (ルシフェラーゼ活性) を測定した。発光量の測定はLumat LB9507 luminometer (EG&G Berthold) を用いて行った。

### <8>結果

- 10 ルシフェラーゼ活性を測定した結果を図10に示す。また、ルシフェラーゼ活性と各塩基配列との対応を検討した結果を図11に示す。

図10中、Bで示されるグラフはショウジョウバエでの結果であり、Cで示されるグラフはヒトでの結果を示す。図10に示されるように、ショウジョウバエでは塩基数を21のRNAを作製することにより、殆どの配列においてルシフェラーゼ活性を抑制できた。他方、ヒトの場合については、単に塩基数を21としただけではルシフェラーゼ活性を抑制できる配列が得られにくいことが明らかとなった。

- そこで、a~pのRNAの塩基配列の規則性を分析した。配列の分析は、図11に示すように2本鎖RNAの5箇所について塩基配列を分析した。図11の表中最上段のaのsiRNAについてみると、ルシフェラーゼ相対活性 (RLA) は0.03、アンチセンス鎖について3'末端側から順に見ると、オーバーハング部 (OH) の塩基配列がUC、続く7塩基 (図11中3'-T) 中のG/C含有量 (グアニンまたはシトシンの含有量) は57%、さらに続く5塩基 (図11中M) のG/C含有量は20%であり、さらに続く7塩基 (図11中5'-T) のG/C含有量は14%であり、5'末端はUであり、合計のG/C含有量は32%である。表中、RLAの値が低いほど、RLAの活性が低く、すなわちルシフェラーゼの発現が抑制されたことを示す。

この結果から、RNA干渉を生じさせるポリヌクレオチドの塩基配列は、3'末端がアデニンまたはウラシルであり5'末端がグアニンまたはシトシンである

確率が極めて高いことが明らかになった。また、3'末端側の7塩基についてはアデニンまたはウラシルが豊富な状態であることが明らかとなった。

## [実施例2]

### 1. 標的発現ベクター pTRECの構築

- 5 下記のようにして標的発現ベクターを構築した。標的発現分子は、RNAiの標的となる配列（以下「標的配列」という場合がある）を有するRNAを発現させる分子である。

pCIneo (GenBank AccessionNo.U47120、プロメガ社製)のCMVエンハンサー/プロモーター下流に標的mRNA配列を構築した(図25)。すなわち、  
10 コザック配列(Kozak)、ATG配列、標的となる23塩基対配列クローニングサイト(target)および組み換えのための制限酵素(NheI、EcoRI、XhoI)認識配列を有する下記の2本鎖オリゴマーを合成した。2本鎖オリゴマーは配列表の配列番号1に示す配列とその相補的な配列とからなる。合成した2本鎖オリゴマーをpCIneoのNheI、XbaIサイトに挿入し、  
15 標的発現ベクターpTRECを構築した(図25)。なお、イントロンは、pCIneoに当初から組み込まれているβ-グロビン由来のイントロン部位を用いた。

5'-gctagccaccatggaattcacgcgtctcgagtcctaga-3' (配列番号1)

図25に示すpTRECは、プロモーターおよびエンハンサー(pro/enh)、とPCRプライマーに対応する領域PAR(F)1およびPAR(R)1を備える。PAR(F)1にはイントロン(Intron)が挟み込まれており、  
20 発現ベクターそのものがPCRの鋳型とならないように設計されている。pTRECは、RNAの転写後、真核生物の培養細胞などのスプライシングが行われる環境下において、イントロン部位が除去され、PAR(F)1が連結される。p  
25 TRECから形成されたRNAはRT-PCRにより増幅できる。イントロンは、pCIneoに当初から組み込まれているβ-グロビン由来のイントロン部位を用いた。

pTRECには、コントロールとしてネオマイシン耐性遺伝子(neo)が組み込まれており、ネオマイシン耐性遺伝子内の配列の一部に対応するPCRプラ

イマーを作製し、ネオマイシン耐性遺伝子の一部についてRT-PCRを行うことにより、ネオマイシン耐性遺伝子を内部標準コントロール（インターナルコントロール）として用いることができる。PAR（F）2およびPAR（R）2は、ネオマイシン耐性遺伝子中のPCRプライマー対応領域を示す。なお、図25の  
 5 例には示していないが、PAR（F）2またはPAR（R）2の少なくとも一方にもイントロンを挟み込んでおくこともできる。

## 2. 標的mRNA検出用プライマーの効果

### （1）培養細胞へのトランスフェクション

24穴プレートの1穴あたりに0.2～0.3×10<sup>6</sup> cellsのHeLa  
 10 細胞をまき、1日後にLipofectamine 2000（Invitrogen社製）を用いて、マニユアルにしたがって0.5μgのpTRECBекターをトランスフェクトした。

### （2）細胞の回収およびmRNAの定量

トランスフェクションの1日後、細胞を回収し、Trizol（Invitrogen社製）を用いて全RNAを抽出した。このRNA100ngを用いて、オリゴ（dT）をプライマーとし、SuperScriptIII RT（Invitrogen社製）により逆転写してcDNA合成  
 15 反応を行った。コントロールとして、逆転写酵素を加えないものを用意した。得られたcDNAの320分の1量をPCRテンプレートとし、SYBRGreen PCR Master Mix（Applied Biosystems社製）を用いて、50μlの反応系で定量的PCRを行い、標的mRNA（mRNA（T）と称する）および、内部コントロール  
 20 としてpTRECB上のネオマイシン耐性遺伝子に由来するmRNA（mRNA（C）と称する）を定量した。定量的PCRにはリアルタイムモニタリング装置ABIPRIZM7000（Applied Biosystems社製）を用い、mRNA（T）の定量にはプライマー対T（配列表配列番号2、3）、mRNA（C）の定量にはプライマー対C（配列表配列番号4、5）をそれぞれ使用した。

25 プライマー対T：

aggcactgggcaggtgtc （配列番号2）

tgctcgaagcattaacccctcacta （配列番号3）

プライマー対C

atcaggatgatctggacgaag （配列番号4）

ctcttcagcaatatcacgggt (配列番号 5)

図 2 6 および図 2 7 に、P C R の結果を示す。図 2 6 および図 2 7 は、縦軸にそれぞれの P C R 産物を、横軸に P C R のサイクル回数を取り、グラフに表したものである。ネオマイシン耐性遺伝子の場合、逆転写酵素により c D N A を合成したものと、逆転写酵素を加えないコントロール (− R T) で、得られた P C R 産物量の増幅の差は小さかった (図 2 6)。これは、c D N A のみならず、細胞内に残っているベクターも P C R の鋳型となって増幅されたことを示す。他方、標的配列 m R N A では、逆転写酵素を添加した場合 (+ R T) と添加しない場合 (− R T) とによる差が大きかった (図 2 7)。この結果は、プライマー対 T のうちの一方がイントロンをはさむ形でデザインされているため、イントロンが除去された m R N A に由来する c D N A が効率的に増幅される一方、イントロンを有する残存ベクターが鋳型となりにくくなっていることを示している。

### 3. s i R N A による標的 m R N A の発現抑制

#### (1) ターゲット発現ベクターへの評価配列のクローニング

ヒトビメンチン (V I M) 遺伝子 (RefSeqID: NM\_003380) コード領域の 8 1 2 - 8 3 4、3 5 - 5 7 に相当する配列を評価の対象とした。これらの配列および EcoRI、XhoI の認識配列を有する下記配列表配列番号 6 および 7 の合成オリゴヌクレオチド (評価配列フラグメント) を作製した。

評価配列 V I M 3 5 (V I M の 3 5 - 5 7 に相当)

5'-gaattcgcaggatgttcggcgcccgggcctcgag-3' (配列番号 6)

評価配列 V I M 8 1 2 (V I M の 8 1 2 - 8 3 4 に相当)

5'-gaattcacgtacgtcagcaatatgaaagtctcgag-3' (配列番号 7)

得られた評価配列フラグメントの両端にある EcoRI、XhoI サイトを利用し、p T R E C の EcoRI、XhoI サイト間に、新たな標的配列としてクローニングし、p T R E C - V I M 3 5、p T R E C - V I M 8 1 2 を構築した。

#### (2) s i R N A の作製

評価配列 V I M 3 5 (配列表配列番号 8、図 2 8)、評価配列 V I M 8 1 2 (配列番号 9、図 2 9)、およびコントロール配列 (siContorol、配列番号 1 0、図 3 0) にそれぞれ相当する s i R N A フラグメントを合成し、アニーリングした。

下記 s i R N A の各配列においては、3' 末端にオーバーハング部を設けてある。

siVIM35 5'-aggauguucggcgcccgggc-3' (配列番号 8)

siVIM812 5'-guacgucagcaauaugaaagu-3' (配列番号 9)

コントロールとして、ルシフェラーゼ遺伝子に対する s i R N A を用いた。

5 siControl 5'-cauucuauccgcuggaagaug-3' (配列番号 10)

### (3) 培養細胞へのトランスフェクション

24穴プレートの1穴あたりに  $0.2 \sim 0.3 \times 10^6$  cells の He L a 細胞をまき、1日後に Lipofectamine 2000 (Invitrogen 社製) を用いて、マニュアルにしたがって  $0.5 \mu\text{g}$  の p T R E C - V I M 3 5 または p T R E C - V I M 8 1 2 と、それぞれの V I M 由来配列に相当する  $100 \text{ nM}$  の s i R N A ( s i V I M 3 5 、 s i V I M 8 1 2 ) を同時にトランスフェクトした。コントロール細胞には、 $0.5 \mu\text{g}$  の p T R E C - V I M 3 5 または p T R E C - V I M 8 1 2 と  $100 \text{ nM}$  のルシフェラーゼ遺伝子に対する s i R N A ( s i C o n t r o l ) を同時にトランスフェクトした。

### 15 (4) 細胞の回収およびmRNAの定量

トランスフェクションの1日後、細胞を回収し、Trizol (Invitrogen) を用いて全RNAを抽出した。このRNA  $100 \text{ ng}$  を用いて、オリゴ(dT)をプライマーとし、SuperScriptII RT (Invitrogen 社製) により逆転写してcDNAを得た。得られたcDNAの320分の1量をPCRテンプレートとし、SYBR Green 20 PCRMaster Mix (Applied Biosystems 社製) を用いて、 $50 \mu\text{l}$  の反応系で定量的PCRを行い、評価しようとするVIM由来の配列を含むmRNA(mRNA(T)と称する) および内部コントロールとして、pTREC上のネオマイシン耐性遺伝子に由来するmRNA(mRNA(C)と称する) を定量した。

定量的PCRにはリアルタイムモニタリング装置 ABI PRIZM7000 (Applied 25 Biosystems 社製) を用い、mRNA(T)の定量にはプライマー対T(配列表配列番号2および3)、mRNA(C)の定量にはプライマー対C(配列表配列番号4および5)をそれぞれ使用した。得られたそれぞれのmRNAの値の比(T/C)を縦軸(標的mRNA相対量(%))としてグラフに表した(図31)。

コントロール細胞の場合、ルシフェラーゼ遺伝子に対する s i R N A は標的m

RNAに効果を及ぼさないため、T/C比はほぼ1になった。VIM812 siRNAでは、T/C比が著しく下がった。これは、VIM812 siRNAが、相当する配列を有するmRNAを切断したためであり、VIM812 siRNAがRNAi効果を有することが示された。一方、VIM35 siRNA  
5 の場合、T/C比はコントロールとほぼ同じ値であったことから、VIM35の配列にはRNAi効果がほとんどないことが示された。

### [実施例3]

#### 1. siRNAによる内在性ピメンチンの発現抑制

##### (1) 培養細胞へのトランスフェクション

10 24穴プレートの1穴あたりに0.2~0.3×10<sup>6</sup>cellsのHeLa細胞をまき、1日後にLipofectamine 2000 (Invitrogen社製)を用いて、マニュアルにしたがって、VIMに対するsiRNA (siVIM35またはsiVIM812) またはコントロールsiRNA (siControl) 100nM、トランスフェクション効率のコントロールとして0.5μgのpEGFP  
15 (Clontech社製)を同時にトランスフェクトした。pEGFPはEGFPが組み込まれている。

##### (2) 内在性ピメンチンmRNAの測定

トランスフェクションの3日後、細胞を回収し、Trizol (Invitrogen社製)を用いて全RNAを抽出した。このRNA100ngを用いて、オリゴ(dT)をプライマーとし、SuperScriptII RT (Invitrogen社製)により逆転写してcDNA合成反応を行なった。得られたcDNA産物を鋳型として、ピメンチンに対するプライマーVIM-F3-84、VIM-R3-274 (配列番号11、12)を用いてPCRを行った。

VIM-F3-84; gagctacgtgactacgtcca (配列番号11)

25 VIM-R3-274; gtctctgaactcgggtgtgat (配列番号12)

また、コントロールとして、β-アクチンに対するプライマーACTB-F2-481、ACTB-R2-664 (配列番号13、14)を用いてPCRを行い、各サンプル間のβ-アクチンの定量値を合わせたうえで、ピメンチンの発現量を評価した。

ACTB-F2-481; cacactgtgcccatctacga (配列番号13)

ACTB-R2-664 ; gccatctcttgctcgaagtc (配列番号 14)

結果を図 3 2 に示す。図 3 2 では、si Control (すなわち、標的とは無関係な配列) を入れた場合を 100% として比較し、VIM に対する si RNA を入れた場合に、VIM の mRNA がどの程度減少したかを表している。si VIM-812 は効果的に VIM mRNA を抑制できたのに対して、si VIM-35 を用いた場合はほとんど RNAi 効果を示さなかった。

### (3) 細胞の抗体染色

トランスフェクションの 3 日後、細胞を 3.7% のホルムアルデヒドにより固定し、定法によりブロッキングを行った。その後、ウサギ抗ビメンチン抗体 ( $\alpha$ -VIM) または内部コントロールとしてウサギ抗 Yes 抗体 ( $\alpha$ -Yes) を加え、室温で反応させた。その後、細胞表面を PBS (PhosphateBuffered Saline; リン酸緩衝生理食塩水) で洗浄し、二次抗体として蛍光標識抗ウサギ IgG 抗体を加え、室温で反応させた。細胞表面を PBS で洗浄の後、蛍光顕微鏡による観察を行った。

蛍光顕微鏡観察の結果を図 3 3 に示す。図 3 3 中、9 つの各枠内において白く現れている部分が蛍光部分である。EGFP および Yes については、何れの細胞でも同程度の発現が確認された。si Control、si VIM35 を導入した細胞では、ビメンチンの抗体染色による蛍光が観察され、内在性ビメンチンの存在が確認された。一方、si VIM812 を導入した細胞では、si Control、si VIM35 を導入した細胞に比べて蛍光が著しく弱かった。この結果は、si VIM812 により内在性のビメンチン mRNA が干渉を受けた結果、ビメンチンの蛋白質の発現量が減少したことを示すものであり、si VIM812 は内在性ビメンチン mRNA にも RNAi 効果を有することが明らかになった。

本発明のアッセイ系で得られた結果 [実施例 2] は、実際に内在性遺伝子に対してそれぞれの si RNA を用いた結果 [実施例 3] とよく一致していたため、このアッセイ系は任意の si RNA の RNAi 活性を評価する方法として有効であることが示された。

[実施例 4]



上記所定の規則 (a) ~ (d) に基づき塩基配列を設計した。塩基配列の設計は、上記 s i R N A 配列設計プログラムを実行する塩基配列処理装置によって行った。塩基配列は、R N A i 活性を有すると予測される配列 15 種 (配列番号 15 ~ 29) と、R N A i 活性を有しないと予測される配列 5 種 (配列番号 30 ~ 34) を用意した。

設計された配列に基づき標的配列および評価対象の s i R N A を調製する以外は、上記実施例 1 と同様にして、ルシフェラーゼ活性を測定することにより、R N A i 活性の評価を行った。結果を図 34 に示す。ルシフェラーゼ相対活性値が低いものが効いている状態、すなわち R N A i 活性を備えた s i R N A である。

上記プログラムにより R N A i 活性を有すると予測された s i R N A は、全てルシフェラーゼの発現を効果的に抑制した。

[R N A i 活性を示した配列 ; 規定配列部分、オーバーハング部を含まない]

- 5, gacgccaaaaacataaaga (配列番号 15)
- 184, gtltggcagaagctatgaaa (配列番号 16)
- 15 272, gtgttggcgcggttattta (配列番号 17)
- 309, ccgcgaacgacatttataa (配列番号 18)
- 428, ccaatcatccaaaaaatta (配列番号 19)
- 515, cctcccggttttaataat (配列番号 20)
- 658, gcatgccagagatcctatt (配列番号 21)
- 20 695, ccggatactgcgatttttaa (配列番号 22)
- 734, ggttttggaatgtttacta (配列番号 23)
- 774, gatttcgagtcgtcttaata (配列番号 24)
- 891, gcactctgattgacaaata (配列番号 25)
- 904, caaatacgattttatctaata (配列番号 26)
- 25 1186, gattatgtccggttatgta (配列番号 27)
- 1306, ccgcctgaagtctctgatt (配列番号 28)
- 1586, ctcgacgcaagaaaaatca (配列番号 29)

[R N A i 活性を示さなかった配列 ; 規定配列部分、オーバーハング部を含まない]

14, aacataaagaaaggcccg (配列番号 30)

265, tatgccggtgttggcgcg (配列番号 31)

295, agttgcagttgcgcccgcg (配列番号 32)

411, acgtgcaaaaaagctccc (配列番号 33)

5 1044, ttctgattacacccgaggg (配列番号 34)

# [実施例 5]

SARS ウィルスに対する siRNA を設計し、それらの RNAi 活性を調べた。標的配列および評価対象の配列をそれぞれ変更する以外は、RNAi 活性は上記実施例 2 と同様のアッセイを行うことにより評価した。

10 siRNA は、SARS ウィルスのゲノムから、3CL-PRO、RdRp、Spike glycoprotein、Small envelope E protein、Membrane glycoprotein M、Nucleocapsid protein、s2m motif の各所について、上記 siRNA 配列設計プログラムを用い所定の規則性に合致するものを設計した。

15 図 35 アッセイの結果、規則性に合致するように設計した 11 個の siRNA は、それぞれ対応する siRNA の配列をターゲットとして組み込んだ RNA を効果的に抑制した。siControl (SARS とは関係のない配列) を入れた場合を 100% として、SARS の各 siRNA を入れた場合の相対標的 mRNA 量を示す。各 siRNA を入れた場合、標的の RNA が 10% 程度あるいはそれ以下まで減少しており、RNAi 活性があることが確認された。

20 [設計した siRNA の配列 (規定配列部分、オーバーハング部を含まない)]

siControl ; gggcgcggtcggtaaagtt (配列番号 35)

3CL-PRO ; SARS-10754 ; ggaattgccgtcttagata (配列番号 36)

3CL-PRO ; SARS-10810 ; gaatggtcgtactatcctt (配列番号 37)

RdRp ; SARS-14841 ; ccaagtaatcgtaacaat (配列番号 38)

25 Spike glycoprotein ; SARS-23341 ; gcttggcgcatatattcta (配列番号 39)

Spike glycoprotein ; SARS-24375 ; cctttcgcgacttgataaa (配列番号 40)

Small envelope E protein ; SARS-26233 ; gtgcgtactgctgcaatat (配列番号 41)

Small envelope E protein ; SARS-26288 ; ctactcgcggtgttaaaaat (配列番号 42)

Membrane glycoprotein M ; SARS-26399 ; gcagacaacggtactatta (配列番号 43)

Membrane glycoprotein M ; SARS-27024 ; ccggtagcaacgacaatat (配列番号 4 4)

Nucleocapsid protein ; SARS-28685 ; cgtagtcgcggttaattcaa (配列番号 4 5)

s2m motif ; SARS-29606 ; gatcgagggtacagtgaat (配列番号 4 6)

#### [実施例 6]

- 5 上記「<5> s i R N A 配列設計プログラム」および「<7> s i R N A 配列設計プログラムを実行する塩基配列処理装置等」に従って、下記 s i R N A を設計した。なお、プログラム実行の際の設定条件は、下記の通りである。

(設定条件)

(a) 3'末端の塩基が、アデニン、チミンまたはウラシルである。

- 10 (b) 5'末端の塩基が、グアニンまたはシトシンである。

(c) 3'末端の 7 塩基の配列において、4 塩基以上が、アデニン、チミンおよびウラシルからなる群より選ばれる 1 種または 2 種以上である。

(d) 塩基数が、19 である。

(e) 10 塩基以上グアニンまたはシトシンが連続する配列を含まない。

- 15 (f) 目的生物の全遺伝子配列のうち、前記標的遺伝子以外の他の遺伝子の塩基配列中に、当該規定配列とのミスマッチ数が 2 塩基以下の類似配列が含まれない。

設計された s i R N A の配列を配列表の配列番号 4 7 ~ 配列番号 8 1 7 0 8 1 に示す。なお、配列表の配列番号 4 7 ~ 配列番号 8 1 7 0 8 1 に記載された、各  
20 s i R N A の目的生物の生物名は、配列表の〈213〉に記載されている。また、R N A i 対象遺伝子の遺伝子名、対象遺伝子の accession、および、対象遺伝子の塩基配列において規定配列に該当する部分については、配列表の〈223〉(Other information) に記載されている。なお、ここでの遺伝子名および accession 情報は、NCBI の「RefSeq」

- 25 (HYPERLINK"http://www.ncbi.nlm.nih.gov/" http://www.ncbi.nlm.nih.gov/) に対応するものであり、RefSeq にアクセスすることによって、各遺伝子の情報(遺伝子の配列、機能等)を取得することができる。

配列番号 4 7 に記載の s i R N A を例にして説明すると、目的生物は Homo sapiens であり、対象遺伝子の遺伝子名は、ATBF1 であり、対象遺伝子の accession

は、NM\_006885.2 であり、規定配列に該当する部分は、NM\_006885.2 の塩基配列のうち塩基番号 908-926 の 19 塩基である。RefSeq にアクセスすると、当該対象遺伝子は、AT-bindingtranscription factor 1 に関連する遺伝子であることが分かる。

5      [実施例 7]

s i R N A とのミスマッチ数が小さい配列を含む他の遺伝子への影響を調べるため、実施例 5 と同様の手法で、ホタルルシフェラーゼに対する s i R N A を設計し、当該 s i R N A とミスマッチ数が小さい類似配列に対する R N A i 効果を調べた。

10      [設計した s i R N A の配列（規定配列部分、塩基数 2 のオーバーハング部を含む）]

3-36    gccattctatccgctggaagatg (配列番号 8 1 7 0 8 2)

[設計した s i R N A の類似配列（大文字で表記した塩基がミスマッチ部位）]

3-36.R1 gccattctatccgcGggCGgatg (配列番号 8 1 7 0 8 3)

15      3-36.R2 gccattctatccgcCggGGgatg (配列番号 8 1 7 0 8 4)

3-36.R3 gccattctatccgcGggaCgatg (配列番号 8 1 7 0 8 5)

3-36.R4 gccattctatccgctggCGgatg (配列番号 8 1 7 0 8 6)

3-36.R5 gccattctatccgctggaGgatg (配列番号 8 1 7 0 8 7)

3-36.R6 gccattctatccgctgTaaTatg (配列番号 8 1 7 0 8 8)

20      3-36.R7 gccattctatccgctAAaagatg (配列番号 8 1 7 0 8 9)

3-36.R8 gccattctatccgctATaaAatg (配列番号 8 1 7 0 9 0)

3-36.L1 gccGGCcCGtccgctggaagatg (配列番号 8 1 7 0 9 1)

3-36.L2 gccCGtCtCGtccgctggaagatg (配列番号 8 1 7 0 9 2)

3-36.L3 gccGtCctGtccgctggaagatg (配列番号 8 1 7 0 9 3)

25      3-36.L4 gccacCCcGatccgctggaagatg (配列番号 8 1 7 0 9 4)

3-36.L5 gccattAtatccgctggaagatg (配列番号 8 1 7 0 9 5)

3-36.01A gcAattctatccgctggaagatg (配列番号 8 1 7 0 9 6)

3-36.01G gcGattctatccgctggaagatg (配列番号 8 1 7 0 9 7)

3-36.01U gcTattctatccgctggaagatg (配列番号 8 1 7 0 9 8)

3-36.19G gccattctatccgctggaagGtg (配列番号 8 1 7 0 9 9)

3-36.19C gccattctatccgctggaagCtg (配列番号 8 1 7 1 0 0)

3-36.19U gccattctatccgctggaagTtg (配列番号 8 1 7 1 0 1)

- 図 3 6 に示すアッセイの結果、塩基数 1 9 の塩基配列を設計する場合、標的遺伝子以外の他の遺伝子がミスマッチ数 2 塩基以下の類似配列を含む場合、当該類似配列部分が RNA 干渉の標的となりうる可能性が高いことが確認された。

#### [実施例 8]

- 本実施例においては、表 1 A-K 記載の塩基配列を有する 21 塩基長のセンス鎖 RNA (表 1 中の「s i RNA-センス」の欄に塩基配列を記載) とアンチセンス鎖 RNA (表 1 中の「s i RNA-アンチセンス」の欄に塩基配列を記載：ただし、当該塩基配列は、3' から 5' 方向に配列を記載している) とからなる s i RNA を用いた。表 1 に示すように、各 s i RNA は、RNA i の対象となる遺伝子(「遺伝子名」の欄参照：以下、標的遺伝子と呼ぶ場合がある)のコード領域の所定位置(「標的位置」の欄参照)に配置された標的配列(「標的配列」の欄参照)、特に、当該標的配列のうちの 5' 末端から 3 番目の塩基から 3' 末端から 3 番目までの塩基に相当するいわゆる規定配列に基づいて適宜設計を行った。そして、各 s i RNA について、ヒト由来の HeLa 細胞を用いて RNA i 効果を調べた。具体的には、センス鎖(s i RNA-センス)として配列番号 8 1 7 1 0 2-8 1 7 6 5 0 中の偶数番号の配列番号の塩基配列を、そして、アンチセンス鎖(s i RNA-アンチセンス)として配列番号 8 1 7 1 0 2-8 1 7 6 5 0 中の奇数番号の配列番号の塩基配列を調べた。以下、実施例における具体的方法を説明する。

#### 1. s i RNA の合成

- センス鎖およびアンチセンス鎖とからなる 2 本鎖 s i RNA を、前述の本発明にかかる規則(実施態様 [1] 等に記載の (a) ~ (d) の規則)にしたがって、各標的遺伝子の前記規定配列に基づき適切に配列設計した。そして、かかる設計に基づいて、プロリゴ・ジャパン株式会社に合成を委託して用意した。具体的な合成方法として、ここでは、表記した所定の塩基配列を有するセンス鎖とアンチセンス鎖とを、10 mM の Tris-HCl (pH 7.5)、20 mM の NaC

1 反応溶液中、90℃で3分間加熱した。そして、37℃で1時間インキュベ  
トし、その後、室温になるまで放置して会合させ2本鎖siRNAを形成した。  
このようにして形成した2本鎖siRNAは、TBE緩衝液中で2%アガロース  
ゲルを用いる電気泳動に供し、それによりセンス鎖とアンチセンス鎖との会合の  
5 確認を行った。

## 2. 細胞培養

実施例では、ヒト由来のHeLa細胞を用いた。HeLa細胞の培地（以下、  
細胞培地と呼ぶことがある）としては、Dulbecco's Modified Eagle's medium (DMEM: Invitrogen社製) に、  
10 非働化10%牛胎児血清 (FBS: Biomedicals, inc社製) を添  
加して調製した培地を用いた。かかる培地中で、HeLa細胞を37℃、5% C  
O<sub>2</sub>存在下で培養した。

## 3. RNAiの対象となる標的遺伝子

子宮頸部癌の細胞であるHeLa細胞を用いており、ここでは、かかるHeL  
15 a細胞の内在性遺伝子であって当該細胞内で高発現している表1の各遺伝子が、  
siRNAによるRNAiの対象、すなわちRNAiの標的遺伝子となる。本実  
施例では、HeLa細胞を用いてこれらの各遺伝子における各siRNAのRN  
Ai効果を調べ、それにより、当該遺伝子に関連する疾患や生物学的機能（具  
体的には、図46の「関連疾患名」、「生物学的機能カテゴリー」および／または「  
20 文献に基づく生物学的機能」の欄の記載参照）に関するsiRNAの効果、すな  
わち、疾患の予防および治療効果や生物学的機能の調節効果を検討した。なお、  
ここでは、内部コントロール遺伝子として、HeLa細胞の内在性遺伝子である  
GAPDHを利用した。

## 4. siRNAの細胞への導入（トランスフェクション）

25 まず、HeLa細胞を $5 \times 10^4$ 細胞/wellの密度で24穴プレートにま  
き、上記の細胞培養条件で24時間培養した後に、1wellにつき、5nMの  
siRNAを導入した。かかる導入後、HeLa細胞を37℃で24時間培養し  
た。ここでは、かかる導入に関し、導入試薬としてLipofectamine  
2000 (Invitrogen社製) を用い、導入時に使用する培地としてD

MEMを用いた。また、具体的な導入方法としては、Lipofectamine 2000とsiRNAとを含むOpti-MEM培地（Invitrogen社製）を細胞培地へ添加し、HeLa細胞を培養することにより、siRNAを細胞内に導入した。このようにsiRNAが導入されたHeLa細胞を、以下では「評価サンプル」と呼ぶ。

一方、後述のPCRにおける標的遺伝子由来のmRNA量の補正用に、以下のキャリブレーターサンプルを用意した。キャリブレーターサンプルでは、Lipofectamine 2000を含みsiRNAを含まないOpti-MEM培地を上記細胞培地へ添加してHeLa細胞を培養し、それ以外は、siRNAを導入した評価サンプルに対する処理と同様の処理を行って調製した。

#### 5. RNAi効果の測定

上記の導入を行った後、上記評価サンプルおよびキャリブレーターサンプルについて、HeLa細胞を回収した。そして、回収した細胞をABI PRISM（登録商標）6700 Automated Nucleic Acid Workstation（Applied Biosystems社製）に供し、マニュアルに従ってかかる装置を操作してRNAの抽出および逆転写によるcDNAの合成を行った。

続いて、得られたcDNAを鋳型とし、SYBR Green PCR Master Mix（Applied Biosystems社製）を用いて、50  $\mu$ lの反応系で定量的PCRを行った。かかる定量的PCRには、リアルタイムモニタリング装置としてABI PRISM（登録商標）7900HT Sequence Detection Systemを用い、マニュアルに従ってかかる装置を操作した。また、PCRのプライマーには、種々検討の結果得られた最適プライマーを用いた。

本実施例では、得られたPCR定量結果を、「比較Ct法」と呼ばれる方法により解析した。当該方法については、Applied Biosystems社のホームページ<http://www.appliedbiosystems.co.jp>に説明が開示されているのでここでは詳細説明は省略するが、当該方法の概略を説明すると、この方法は、キャリブレーターサンプルと比較して評価サ

ンプルが何サイクル早く（または遅く）Threshold Lineに到達するかに着目して相対定量するものである。

具体的には、まず、PCRにより、評価サンプルおよびキャリブレーションサンプルについて、標的遺伝子由来の塩基配列を含む相対的なmRNA量に相当するCt1と、内部コントロール遺伝子由来の塩基配列を含む相対的なmRNA量に相当するCt2とを定量した。以下においては、評価サンプルの上記Ct1を「Ct1(E)」と呼び、上記Ct2を「Ct2(E)」と呼ぶ。また、キャリブレーションサンプルの上記Ct1を「Ct1(C)」と呼び、上記Ct2を「Ct2(C)」と呼ぶ。

- 10      ここで、「Ct」は、Threshold Lineに達するサイクル数であり、  
 具体的には、下記（1）式で定義される。なお、ここでは増幅効率を1としている。  
 Ctに添付された数字は、「1」が標的遺伝子由来の場合のmRNA量であることを示しており、「2」が内部コントロール遺伝子由来の場合のmRNA量であることを示している。また、Ctに添付された（E）および（C）は、「E」が評価サンプルであることを示しており、「C」がキャリブレーションサンプルであることを示している。添付記載の「1」、「2」、「E」、「C」にかかわらず、「Ct」は下記のように定義される。

$$Ct = (\log [DNA]_t - \log [DNA]_0) / \log 2 \quad \dots (1)$$

- ただし、（1）式中、[DNA]<sub>t</sub>は、Threshold Lineに達した際のDNA量を示しており、[DNA]<sub>0</sub>は、mRNAから逆転写したcDNAの初期量を示している。

- このようにPCRによる定量で取得したCt1(E)、Ct2(E)、Ct1(C)、Ct2(C)を比較Ct法に供して解析し、siRNAのRNAi効果の評価指標となるRQ値を取得した。RQ値とは、キャリブレーションサンプルにおける標的遺伝子のmRNAレベルを1とした時の、評価サンプルにおける標的遺伝子のmRNAレベルの相対値である。具体的には、RQ値は、下記（2）式で定義される。

$$RQ = 2^{(-\Delta\Delta Ct)} \quad \dots (2)$$

ただし、（2）式の $\Delta\Delta Ct$ は、下記（3）式で定義される。



$$\Delta \Delta C t = \Delta C t (E) - \Delta C t (C) \quad \cdots (3)$$

ここで、(3) 式中、 $\Delta C t (E)$  は下記 (4) 式で定義され、 $\Delta C t (C)$  は下記 (5) 式で定義される。

$$\Delta C t (E) = C t 1 (E) - C t 2 (E) \quad \cdots (4)$$

$$5 \quad \Delta C t (C) = C t 1 (C) - C t 2 (C) \quad \cdots (5)$$

なお、(2) ~ (5) 式における添付記載「1」、「2」、「E」および「C」の説明は、上記の通りである。

#### 6. RNA i 効果の評価

上記のようにして取得した RQ 値を表 1 A-K に示す。表 1 の「遺伝子名」の欄の記載、「refseq\_N0.」の欄の記載、「標的配列」の欄に記載された配列において実際に RNA i の標的となる配列、および「標的位置」の定義については、本明細書中、「図面の簡単な説明」の項目において、図 4 6 に関連して前述した通りである。

本実施例においては、上記のようにして算出された RQ 値 (表 1 の「RQ 値」の欄参照) に基づいて、各 siRNA の標的遺伝子に対する RNA i 効果の評価した。表から明らかなように、配列番号 8 1 7 1 0 2 - 8 1 7 6 5 0 中の偶数番号の配列番号の塩基配列を有するセンス鎖と、配列番号 8 1 7 1 0 2 - 8 1 7 6 5 0 中の奇数番号の配列番号の塩基配列を有するアンチセンス鎖とからなる siRNA では、RQ 値が全て 1 未満、そしてほぼ全てが 0.5 未満となり、よって、これらの siRNA は表 1 記載の標的遺伝子の発現を 50% 以下に抑制すると示された。このような各 siRNA の RNA i 効果は、COS 細胞を用いて上記と同様の操作を行った場合においても実現された。

さらに、用いた 294 種の本発明の siRNA 全てが RNA i 効果を奏するという実施例 8 の結果から、本発明にかかるポリヌクレオチド (siRNA) は、哺乳動物細胞において、標的遺伝子に対して RNA i 効果を有効に奏し遺伝子発現を 50% 以下に抑制することが明らかとなった。

なお、実施例 1 - 8 においては、センス鎖およびアンチセンス鎖が全て RNA で構成された siRNA を用いる場合を示したが、キメラ構造を有する siRNA を用いた場合においても、上記実施例 1 - 8 と同様の結果が得られる。siRNA

NAがキメラ構造を有する場合の詳細な説明はここでは省略するが、例えば、実施例8においてキメラ構造のsiRNAを用いた場合、当該siRNAは、配列番号817102～配列番号817651で示すセンス鎖およびアンチセンス鎖からなる実施例8のsiRNAと以下の点で構成が異なる。

- 5      すなわち、キメラ構造のsiRNAは、表1に示す配列番号817102～配列番号817651で示すセンス鎖およびアンチセンス鎖からなるsiRNAと同様の塩基配列を有するが、センス鎖の3'末端（例えば、表1の配列番号8102記載のセンス鎖ではA）から8～12ポリヌクレオチド（例えば10ポリヌクレオチド、好ましくは11ポリヌクレオチド、より好ましくは12ヌクレオチド）の部分と、アンチセンス鎖の5'末端（例えば、表1の配列番号8103記載のアンチセンス鎖ではA）から8～12ポリヌクレオチド（例えば10ポリヌクレオチド、好ましくは11ポリヌクレオチド、より好ましくは12ヌクレオチド）の部分とがDNAで構成されており、よって、表1に示すセンス鎖およびアンチセンス鎖の塩基配列のうち、当該ポリヌクレオチド部分のUがTに置換された点が、配列番号817102～配列番号817651で示すsiRNAと異なる。
- 10
- 15

表 1A

遺伝子名	refseq_ID	RQ	標的位置	標的配列	配列番号	siRNA-センス	配列番号	siRNA-アンチセンス	配列番号
PSEN1	NM_000021.2	0.23	532	tgtctgtgctaccatttaagtc	307985	GUCGUGGCUACCAUAUAAGUCA	817102	ACUUAAGUGUACCCACGACCA	817103
JAG1	NM_000214.1	0.28	794	ctggccgagctctatacgttgc	147021	GGCCGAGGCUUACUAGCUUGC	817104	AACGUUAGGACCCUGGGCCAG	817105
POLR2A	NM_000937.2	0.34	2425	tctcatcgaggctactactt	36223	CUCAUCGAGGGUACUACUUAU	817106	UAGUAGACCCUCCUGAUGAGGA	817107
CDC6	NM_001254.3	0.35	383	gtctggcgatgacaacctatgc	76037	CUGGGCGAUGACAAACCUAUGC	817108	AUAGGUUGUCAUCGCCACAGC	817109
CSE1L	NM_001316.2	0.15	393	gcgatcgagtgccatttaagc	128329	CGAUCGAGUGGCCAUUAAAGC	817110	UUUAUUGGCCACUCGAGCGGC	817111
HDAC2	NM_001527.1	0.15	1110	tggctacacaattccgtaagtgtg	4714	GCUACACAUCGUAUUGUUG	817112	ACAUUACGGAUUGUGUAGCCA	817113
HIF1A	NM_001530.2	0.2	809	aactagccgaggaagaactatga	237	CUAGCCGAGGAACAACUAGCA	817114	AUAGUUUCCUCCUGGCUGUU	817115
IGFBP4	NM_001552.1	0.064	706	aagcacttcgccaataatcgaga	124916	GCACUUGCCCAAAUUCGAGA	817116	UCCAAUUUUGGCGAAGUGCUU	817117
CDC2	NM_001786.2	0.18	656	tgggttcagctcgtttactcaact	75723	GGGUCAGCUGGUUACUACAUCU	817118	UUGAGUAACGAGCUGACCCCA	817119
CDK2	NM_001798.2	0.21	689	tggagtccctgttcgtacttaca	76134	CAGUCCCGUUCGUAGCUUACA	817120	UAAGUACGAACAGGGACUCCA	817121
CDK7	NM_001799.2	0.3	575	ggagagcccaataagagctttatc	76204	GAGCCCAUAGAGCUUUAUC	817122	AUAAGCUCUUAUUGGGGCUCCC	817123
CUTL1	NM_001913.2	0.36	139	gtccagaagcggctttatcgaa	2624	CCACAAAGCGGCUUUAUCGAA	817124	UCCAUAGCCGCUUUCUGGAC	817125
E2F4	NM_001950.3	0.2	1220	ccggagagaccacattatattct	2910	CGGAGAGACCAGAUUAUUAUCU	817126	AUAUAUCGUGGUCUCUCCGGG	817127
GNB1	NM_002074.2	0.072	672	tgcgttgccctggataacatttg	192277	CGGUGGCCUGGAUAACUUAUG	817128	AAGUUUACAGGCCACCGCA	817129
HSPA4	NM_002154.3	0.055	578	aggataaaggtagacatatatgg	85159	GUUUAAGGUGACAUUAUUGG	817130	AUAUAUGUCACCUUUUAUACCU	817131
KPNA1	NM_002284.1	0.2	520	ttctcttcagaccggaatttga	133261	CUCUUCAGACCCGAAUUGUGA	817132	ACAUUCGGGUCUGAAGAGAA	817133
KPNA3	NM_002287.2	0.074	1921	aggaggtacctacaaattttgac	177084	GAGGUACCUACAUIUUGAUC	817134	UCAAAUUGUAGGUACCUCCU	817135
KPNA4	NM_002288.3	0.094	1595	tagtactcgaiggactaagta	269352	GUACUCGAGGACUAGUAU	817136	UACUAGUCCAUCCAGUACUA	817137
PAWR	NM_002583.2	0.21	984	gtgggttccctagataaacagg	113162	GGGUUCCCUAGAUUAACAGG	817138	UGUUUAUUCUAGGGAACCCAC	817139
POLD1	NM_002691.1	0.29	2216	ggggttcgagcgtcagatgatcg	35766	GGUUCGAGCUCAGUAUGC	817140	AUCAUCUGAGCUGCGAACC	817141
POLR2G	NM_002696.1	0.11	586	tggctccctgtagacgatctact	53520	GCUCCCGUAGGACGCUUUAUCU	817142	UAAUUGGUCAUCAGGAGCCA	817143
PRKACB	NM_002731.1	0.1	944	cacgacagattggatttctattt	96985	CGACAGAUUGGUAUGCUUUAU	817144	AUAGCAUCCAAUUCUGUGUG	817145
PRKCA	NM_002737.2	0.19	429	ctcgcatatgaacttcacaagc	97011	GGCAUAGAAGCUUACACAGC	817146	UUGUAAACCUUACUAGCCAG	817147
MAPK1	NM_002745.2	0.086	383	aggttcgagtagctatcaaaaa	89815	GUUCGAGUAGCUUACACAAA	817148	UCUUGAAGCUUACUCCGAUUU	817149
MAPK9	NM_002752.3	0.22	261	atcgtgaacttgcctcttaaaa	90069	CGUGAACUUGUCCUUAUAAA	817150	UUAAGAGGACAAGUUCACGAU	817151
MAP2K1	NM_002755.2	0.21	114	ccccgacggctctgcagtttaacg	88938	CCGACGGCUCUGCAGUUAACG	817152	UUAACUGCAGAGCGGCGGGG	817153

表1B

遺伝子名	refseq_ID	RQ	標的位置	標的配列	配列番号	sIRNA-センス	配列番号	sIRNA-アンチセンス	配列番号
PSMA2	NM_002787.3	0.022	56	ttcagccgctcttgtaacttgt	185145	CAGCCGCGUCGUAACUUGU	817154	AAGUUUACCACACGGGUGAA	817155
PSMA3	NM_002788.2	0.074	599	atgacctgcgtatatactgtaa	185178	GACCUCCCGUGAUUAGUUAA	817156	AACGAUAUACGGCAGGUCAU	817157
PSMA4	NM_002789.3	0.1	183	gtccttataccagtgtaatat	185191	CGCUUAUACCAAGUUGAUUU	817158	AUCAAUUGGUUAUAGCGAC	817159
PSMA5	NM_002790.2	0.39	107	tacacagggcgtagaacttt	185211	CGACAGGGCGGUAUACUUU	817160	AGUAUACACGCCCGUGUGUA	817161
PSMA6	NM_002791.1	0.07	129	ccggttttgaccgccacattacc	53630	GGUUUUGACCGCCACAUUACC	817162	UAUUGUGCGGUGCAAAACCGG	817163
PSMA7	NM_002792.2	0.13	346	cgccgatgcaaggatagatca	185235	CCGAUGCAAGGAUAGUCAUA	817164	AUGACUAUCCUUGCAUCGGCG	817165
PSMB1	NM_002793.2	0.035	130	tgcgattttcgccctacgttttc	185241	CGAUUUUCCGCCUACGUUUUC	817166	AAACGUAAGGGGAAAAUCGCA	817167
PSMB2	NM_002794.3	0.66	530	cagtatctcgaccgatactaca	185279	GUUCCUGCAGCGGAUACUA	817168	UAGUAUCGUGCGAGGAUACUG	817169
PSMB3	NM_002795.2	0.063	312	aggtcgcagatacaaaccttata	185290	GUGCGCAGAUCAACCUUUAU	817170	UAAGGUUUUGAUUGCCGACGU	817171
PSMB4	NM_002796.2	0.052	317	ctctggcgactacgtgatttcc	185302	CUGGCGACUACCCUGAUUUC	817172	AAUACAGCGUAGUGCCGACAG	817173
PSMB6	NM_002798.1	0.067	683	gggtagagcggcaagtacttttg	185333	GUAGAGCGGCAAGUACUUUG	817174	AAAGUACUUGCCGCUUACCC	817175
PSMC3	NM_002804.3	0.089	1197	cgcccttgaccgcaagatagagt	98373	GCCUUGACCGCAAGAUACAGU	817176	UCUAUUCUUGCGGUCAAGCGG	817177
PSMD7	NM_002811.3	0.11	477	ctgtccttaattcgtatggtca	57203	GUCCUAUUCGUUUGGUCA	817178	ACCAUACGGAAUUGACACAG	817179
RAF1	NM_002880.2	0.41	897	gtcacatccacacctaattgtcc	98850	CGACAUCCACACCUAAUGUCC	817180	ACAUUAGGUGUGGAGUGGAC	817181
SHC1	NM_003029.3	0.12	601	gccgagtatgtgccctatgttc	253033	CGAGUAUGCGCCUAGUUGC	817182	AACAUAGCGCACAUACUGGC	817183
SP3	NM_003111.1	0.4	2324	agctcgcgagatgatactttga	40777	CUGGCGGAGAUAGUACUUUA	817184	AAAGUAUACUUCGCCGACGU	817185
TCF7	NM_003202.1	0.23	92	accgtctactcgccttcaatct	41852	CGUUAUCCGCCUUAUACU	817186	AUUGAAGCGGAGUAGACGGU	817187
TEAD4	NM_003213.1	0.16	1386	tgcgtgcatgtgctatgtcttt	13093	CUGUGCAUUGCCUAGUUCUUU	817188	AGACAUAGGCAUUGCACAGCA	817189
TMPO	NM_003276.1	0.14	1609	ctcactaccttaggtctagaagt	127873	CACUACCUUAGGUCUAGAAGU	817190	UUCUAGACCUAAGGUAGUGAG	817191
YWHAB	NM_003404.3	0.072	769	cagctacacacccaattcgtct	126595	GCCUACACACCAAUUGGUGU	817192	AGGAUUGGGUGUGUAGGGUG	817193
YWHAH	NM_003405.2	0.094	824	cacactaaacgaggatttcctata	126608	CACUAAACGAGAUUCCUUAU	817194	UAGGAUCCUUGUUAUGUGUG	817195
OGT	NM_003605.3	0.16	449	cfcgcagaacttattcgaattt	134296	GCCAGAACCUUAUUGCAUUU	817196	AUUGCAUAAAGCUUUCGCCAG	817197
PPP2CB	NM_004156.1	0.23	801	cagtcgacccaattactgttata	162283	GUCCACCAUUAUACGUUAUC	817198	UAACAGUAUUGGGUGCACUG	817199
SCYE1	NM_004757.2	0.11	305	ctgcacgctaattctatggtttc	49202	GCACGCUAAUUCUUGGUUUC	817200	AACCAUAGAAUAGCGGUGAG	817201
HDAC1	NM_004964.2	0.15	870	tccgttaggtttgcttcaattctaa	4672	GGUAGGUGGUUUAUACUUA	817202	AGAUUGAAGCAACCUAACCGA	817203
PSMD5	NM_005047.2	0.15	1476	gtgaaggccatactatgtgaaa	323491	GAGGGCCAUACUAGUGAAA	817204	UCACAUAGUAGGCCCCUUCAC	817205

遺伝子名	refseq_ID	RQ	標的位置	標的配列	配列番号	sIRNA-センス	配列番号	sIRNA-アンチセンス	配列番号
CEBPB	NM_005194.2	0.31	1001	agcagcagcagctacagaatc	2153	CACACGACGAGUACAGAUC	817206	UCUUGUACUCGUGCGUGUCU	817207
EGFR	NM_005228.2	0.27	2387	ccgctcgctatcaagaattaa	81171	CGUCGUUAACGAAUUAAG	817208	UAAUUCUUGAUAGCAGCGG	817209
ELK1	NM_005229.2	0.22	419	ggccttgcggtactactatgaca	3142	CCUUCGCGUACUACUAGACA	817210	UCAUAGUAGUACGCAAGGCC	817211
EWSR1	NM_005243.1	0.22	631	ctctacacagccgactagttatg	51496	CUACACAGCCGACUAGUUAUG	817212	UAAUAGUCGCGUGUGUAGAG	817213
HCF-C1	NM_005334.1	0.22	5339	ggcacccgtccctgactataacc	4624	GCACGCGUCCUGACUUAACC	817214	UUUAUAGUCAGGACCGGUGCCC	817215
JUND	NM_005354.2	0.22	1053	ctcgccctgggaagagaagtga	5612	CGCCCGUGGAGACAAAGUGA	817216	ACUUUCUUCUCCAGCGCGGAG	817217
YES1	NM_005433.3	0.1	839	ttagcactagaggttaactagg	107693	GGGACUAGAGUUAAACUAGG	817218	UAGUUUAAACCUAGUCGCAA	817219
TAF6	NM_005641.2	0.13	748	ttagcactagccttgaagctaaag	41513	GACUAGCGCUUGAAGCVAAG	817220	UUAAGCUCAAGCGUAGUCA	817221
TAF7	NM_005642.2	0.39	1133	ctggaaccacggaattactctgc	112459	GGAACACGGAUUUACUCUGC	817222	AGAGUAAUUCGUGGUCCAG	817223
PRKN	NM_005813.2	0.25	3090	aactgcatttggaagcgttaca	97488	CUCGCAUUGGAGACGUAACA	817224	UAAAGUUCUCCAAUCCGAGUU	817225
PA2G4	NM_006191.1	0.08	752	gaggtacatgaagtatactcgt	185582	GGUACAUAGAUAUUGUUGU	817226	AGCAUUAUUAUUGUAGUCCUC	817227
TAF10	NM_006284.2	0.13	461	gcctcagaccacgataatttc	12455	CUCAGACCCAGCAUAAUUG	817228	AAUUAUGCGUGGUGUGUAGGC	817229
COPS5	NM_006837.2	0.22	726	atgcaatcgggtgggtatcatagc	56199	GCAUUCGGUGUGUACUAGC	817230	UAUUAUACCCACCGAUUGCAU	817231
STAT1	NM_007315.2	0.21	2177	aaggccatcacattcacatagg	12048	GGGCGCAUACAUCUACAUGG	817232	AUGUGAAUGUGAUGGCCCCUU	817233
GALNT1	NM_020474.2	0.092	1203	tagattatggagatatatcgta	161846	GAUUAUUGGAGAUUAUUGUCA	817234	ACCAUUAUUAUUGUACUUAU	817235
CDKN2A	NM_000077.3	0.16	677	ggcaccagaggcagtaaccatgc	219272	CACCAGAGGCAUAAUCCAUCC	817236	AUGGUUACUGGCUUUGUGCC	817237
RB1	NM_000321.1	0.094	2701	agcgacggtgctctcaaaagaag	10143	CGACCGUGUCCUCAAAGAG	817238	UCUUUUGAGACACAGGUGCU	817239
CD44	NM_000610.2	0.16	233	ctggccagatcgatltgaatat	126722	GGCGAGUAGUUAUUGAUUAU	817240	AUUAUUAUUGUAGUGCGGAG	817241
COMT	NM_000754.2	0.093	922	gtgcacacactacccaatcttcc	165318	GCACACUACCAUUGUUGUCC	817242	AACGAAUGGUAUGUGUGGCAC	817243
GSTP1	NM_000852.2	0.14	624	tactgaaccctcccaatcaatgg	216683	CGUAAACUCCGCAUCAAUGG	817244	AUUAUGGGGAGGUUACAGUA	817245
IGF1R	NM_000875.2	0.27	279	cacggtctattccagtagtacttc	85645	CGGUAAUUAUCCGAGUACUUGC	817246	AGUAUUGGUAUAGACCGUG	817247
ARHA	NM_001694.2	0.098	371	taccagataccgatgttatact	108327	CCCAGUAUCCGUAUUAUUAU	817248	UUAUUAUUGGUAUUGGUAU	817249
CTSC	NM_001814.2	0.29	236	caggttccagccagatgtcaact	188060	GUUCCAGCGCGCAUGUACAUCU	817250	UUGACAUCGCGUGGGAACCG	817251
FN1	NM_002026.1	0.13	473	acctagccaatgccttggcttct	126771	CUAGGCAUUGCGUUGUUGU	817252	AAACCAACGCAUUGGCUAGGU	817253
LGALS1	NM_002305.2	0.047	367	agctaccagatggataccaattc	174842	CUGCCAGUUGGAUUGCAUUC	817254	AUUCGUAUUAUUGGAGGU	817255
NRAS	NM_002524.2	0.11	445	cagtgccatgagagaccaatata	109675	GUGCCAUUGAGACCAUUAACA	817256	UAUUGGUGUUAUUGGACUG	817257

表1D

遺伝子名	refseq_ID	RQ	標的位置	標的配列	配列番号	siRNA-センス	配列番号	siRNA-アンチセンス	配列番号
PCNA	NM_002592.2	0.087	526	cegatatttggcgctagtattt	34625	GAUACUUGGCGGCUAGUAUUU	817258	AUACUAGCGCGCAAGUAUCCG	817259
PKM2	NM_002654.3	0.08	565	tcttgctcttagaactaaag	166519	CUGUGGCUUAGACACUAAG	817260	UAGUGUCUAGAGCCACAGCA	817261
RXRA	NM_002957.3	0.47	1342	tgcttcattcggtctcaatgc	10866	CGGUCAUUGGCGCUCAAUCC	817262	AUUUAGCGCGGAGGAGCGCA	817263
S100A4	NM_002961.2	0.12	152	agctcaacaagttagaactaaag	152374	CUCACAAGUCAGAACUAAG	817264	UUAGUUCUGACUUGUUGAGCU	817265
TFAP2A	NM_003220.1	0.37	978	tacgtgtcgaaacgaatttc	546	CGUGCGGAAACCGGAUUUCC	817266	AAAUCCGUUUGGCACACGUA	817267
EIF3S10	NM_003750.1	0.28	145	ccctcaaacgcgcgaacgaattt	56509	CUCAAACGCGCCACGAAUUU	817268	AUUGUUGGCGCGUUGAGGG	817269
EIF3S9	NM_003751.2	0.12	641	gggacccgacgcgacttgagaac	51229	GACCCGACGACUUGAGAAAC	817270	UUCUAAUUGGUGGGGUC	817271
EIF3S8	NM_003752.2	0.1	417	ctgacctagaggactatctta	56770	GACCUAGAGGACUUCUUAU	817272	UAGAUAGUCCUCUAGGUCAG	817273
EIF3S7	NM_003753.2	0.15	1729	ctcgatccacgtgaagactcc	56765	CGGUACCGGUGAAGACUCC	817274	AGUCUUCACGUGGUAACCGAG	817275
EIF3S4	NM_003755.2	0.12	182	aggatcaacggaaacataaag	51220	GUCAUCAACGGAAACAUAAAG	817276	UUUUGUUUCCGUUGAGACCU	817277
EIF3S3	NM_003756.1	0.19	601	aagaagtcgcgaattgtaattaa	56655	GAGUGCCGCUUGUAUUAAA	817278	UAAUUAACAUCGGCACUUCU	817279
EIF3S2	NM_003757.1	0.11	46	agcgttcattacgcagattaa	56617	CGGUCUUAUCCGAGAUUAG	817280	UAAUCUCCGUUAUGGACCGCU	817281
EIF3S1	NM_003758.1	0.16	442	gacctcgaaattagcaaggaac	56505	CCUGCAUUUAGCAAGGAAAC	817282	UUCUUUUGCUAAUUCGAGGUC	817283
BAG1	NM_004323.2	0.25	697	atggttcgggtcgtgttaatt	129118	GGUUGCCGGGCUAGUUAUU	817284	UUACAUGACCCCGCAACCAU	817285
AKT1	NM_005163.1	0.21	239	aaccagggagatcatacaagacc	71961	CGAGGGGAGUACAUAAGACC	817286	UCUUGAUGUACUCCCGUCGUU	817287
NDRG1	NM_006096.2	0.074	567	gcctacatcttaactcgatttgc	236862	CUACAUCUAAACUCCAUUUGC	817288	AAAUCCAGUAGGAGUAGGC	817289
TSG101	NM_006292.2	0.13	943	atggttaccggtttagatcaaga	43049	GGUACCGUUAUAGAUCAAGA	817290	UUGAUUAAACGGGUAAACCAU	817291
BRCA1	NM_007294.1	0.22	4329	gaggaataccatgcaacataacc	16042	GGGAUACCAUGCAACAUAACC	817292	UUUUGUUGCAUGGUUAUCCUUC	817293
NOTCH2	NM_024408.2	0.085	6047	cgcaaccgagtaactgactaga	149219	CAACCGAGUACUUCUUAUGA	817294	UAGAUCAUUAUCCGUUUGCG	817295
ARHC	NM_175744.3	0.11	194	gtctacgtccctactgtcttga	108338	CUACGUCUACUUCUUAUGA	817296	AAAGACAGUAGGAGCGUAGAC	817297
BLM	NM_000057.1	0.35	1998	gagcgtttccaagcttagttt	22786	GGCUUCCAAAGUUAUAGUUU	817298	ACUAAGACUUUGGAAACGGUC	817299
GSN	NM_000177.3	0.13	740	cagcaatcggtatgaagactga	113910	GCAUCGGUAGUAGAAGACUGA	817300	AGUCUUUUAUACCGAUUGUG	817301
MLH1	NM_000249.2	0.19	847	aacctcgtcttgtagaatcaac	91691	CCAUCGUCUGGUAAGAUCAAC	817302	UGAUUUAUACCGAGAGUUGU	817303
MSH2	NM_000251.1	0.14	1282	acctactctatcaggatataat	16366	CGACUUAUACAGGUAUAAU	817304	UUAAUCCUAGUAGAGUCCGU	817305
SOD1	NM_000454.4	0.037	343	tgggtggtggcgaigtgtctattg	167035	GUGUGCGGAGUUGUCUUAUG	817306	AUAGACACAUCCGCCACACCA	817307
TOP2A	NM_001067.2	0.24	2525	ctctagtccacgatacatcttt	42581	CGUAGUCCAGCAUACUUAU	817308	AGAUGAUUCGUGGAGUAGCAG	817309

表1E

遺伝子名	refseq_ID	RQ	標的位置	標的配列	配列番号	siRNA-センス	配列番号	siRNA-アンチセンス	配列番号
TOP2B	NM_001068.2	0.11	1011	aggteggcgcacgtggaattatg	42875	GUGGACGGCAGCGGUAUUG	817310	UAUCCACGCGCGCUCACCGU	817311
TUBG1	NM_001070.3	0.11	603	gtgggtggtccagctttacaattc	111063	GGUGGUCCAGCGCUUACAUIUC	817312	AUUGUAAGGCUUGGACCAACAC	817313
SLC25A5	NM_001152.1	0.035	670	tgcttcggatcccaagaacact	181277	CUUCGCGAUCCCAAGACACU	817314	UGUUCUUGGAUCCGGGAAGCA	817315
ANXA11	NM_001157.2	0.17	1685	caccacatctcggagatatttc	128933	CGACAUCUCGGGAGAUUUC	817316	AGUAUCUCCCGAGAUUGUG	817317
AP2B1	NM_001282.1	0.19	714	tccgttagcgcatattcigaag	273115	CCGUAGCGGCAUUUUCUGAAA	817318	UCAGAUAAUCCCGCUACGGCA	817319
GTF2I	NM_001518.2	0.37	979	atgtctgacaggtcaatattatct	4585	GCUGACAGGCUACAUAUUCU	817320	AUAGUAUUGACCUUCACAGCAU	817321
IGFBP7	NM_001553.1	0.045	488	tccgagcaaggtctcttccatagt	124925	CGAGCAAGGCUCCUCCAUAGU	817322	UAUGGAAGGACCUUUGCUGCA	817323
AXL	NM_001699.3	0.14	1857	aagaagagagacccgttatgaga	73957	GAGGAGACCCGUUAUUGGAGA	817324	UCCAUAACGGGUCUCCUUCUU	817325
CAPG	NM_001747.1	0.17	790	ggccgcagctctgtataaggtct	113927	CCGACGUCUGUAUAGGUCU	817326	ACCUUAUACAGAGCUGCGGCC	817327
DUT	NM_001948.2	0.16	419	tgcgaacggattttttatccaga	165338	CGAACGGAUUUUUAUCCAGA	817328	UGGAUAAAAAUCCGUUCGCA	817329
JUP	NM_002230.1	0.18	1133	atcctctgttccagcaataagc	120947	CCGUGUGUCCCGAGCAUAAGC	817330	UUUUGGUGGACACACGGAU	817331
KPNB1	NM_002265.4	0.043	2885	ggcggagatcgaagactaataaa	157208	CGGAGAUCCAGACUAACAAA	817332	UGUUGGUGUCCGACUCCGCC	817333
MYH9	NM_002473.3	0.12	465	caccgctacagagatataatgc	92428	CGGCCUACAGGAGUAUAGUC	817334	AUCAUACUCCUGUAGCGGUG	817335
PFN2	NM_002628.2	0.08	82	cggtacttgcagcccaataacg	118724	GCUACUGGCGAGCCCAUAUAG	817336	UAUUUGGUGGCGAGUAGCGG	817337
PPP1CA	NM_002708.2	0.081	239	ctcagatcttgcgtgacataca	162170	CAGAUUCGCGGUGACAUACA	817338	UAUGUACCCGACAGUUCUAG	817339
PPP1CB	NM_002709.1	0.15	1028	ttgctaaccagacagtttggttaacc	162204	GCUAAACGACAGUUGUAACC	817340	UUACCAACUGUGGUUAGCAA	817341
PPP1CC	NM_002710.1	0.32	1084	aacgcttccaggggtatgatca	162234	CGCCUCCAGGGGUUAGAUCA	817342	AUCAUACCCUUGGAGCGGUU	817343
THBS1	NM_003246.2	0.28	3224	caccgaaaggagacga tgaactag	153751	CCCAAGGCGAGAGACUAUUG	817344	UAGUACUGUCCCUUUCGGUG	817345
TTC1	NM_003314.1	0.16	879	accggctcttacttccatcaattt	136959	CGGCUUGUACUCCAUCAUUIU	817346	AUUGAGGAGUACGAGCCGGU	817347
TXNRD1	NM_003330.2	0.15	1777	gacgatctcgtcaagagataaca	167072	CGAUCCGUGCAAGAGAUACA	817348	UUUUCUUGACCGGAUUCGUC	817349
VIL2	NM_003379.3	0.078	458	aggaaatccttagcga tgaatct	292759	GAAUCCUAGCGAUAGAUUCU	817350	AUCUACUGGUUAGGAUUCU	817351
VIM	NM_003380.1	0.073	1447	tcttgattaaagacggttgaact	287581	CUGAUAAAGCGGUUAGAAACU	817352	UUUCAAACCGGUUUAUACGGA	817353
EXO1	NM_003686.3	0.25	1631	tggaaacagtgatttagtactaaa	26320	GAAAGAGUUAUAGUACUAAA	817354	UAGUACUUAUACUCCGUUCCA	817355
RUVBL1	NM_003707.1	0.085	215	gagca tggcgtctatagaga	100083	GGCAUGUGCGGUCUAUACUACA	817356	UACUAGACGCCACAUCCUUC	817357
ADAM9	NM_003816.1	0.15	1051	agccacacagcgggataatgt	155099	CCACCAGCGCGGGAUUAUUCU	817358	AUUUACCCCGCCUCCGUGGCU	817359
TNFRSF10B	NM_003842.3	0.41	945	tgcagcgtgctttagattgtgg	127913	CAGCCGUGAGUUCUUGUGG	817360	ACAUAACAGACUACGCGGCA	817361

表 1F

遺伝子名	refseq_ID	RQ	標的位置	標的配列	配列番号	siRNA-センス	配列番号	siRNA-アンチセンス	配列番号
SHMT1	NM_004169.3	0.12	975	gccgagctggcagatcatcttctac	214683	CGAGCUGGCAUCCUUCUAC	817362	ACAGCAUCCAGCCAGCUGGC	817363
CAD	NM_004341.2	0.36	5394	ggggagggtgcctatactgaleg	74903	GGAGGUUGCUAUUUGAUGG	817364	AUCGAUAGGCAACCUCCCC	817365
CSK	NM_004383.1	0.22	1132	gagcaactcgccgcatagcaacc	77629	CGCAACUGCGGCAUAGCAACC	817366	UUGCUAUGCCCGCAUUGCGUC	817367
XPC	NM_004628.3	0.31	584	ttcgagggcgatgaacagcttc	17754	CGAGGGCGAUGAAACGUUUC	817368	AACGUUUCAGCCCGCUCGAA	817369
HGS	NM_004712.3	0.35	1883	cccaatgcacggcggtgacatga	157053	CAAUCCAGCGCGUGUACAUGA	817370	AUGUACAGCCCGUGCAUUGGG	817371
LRRFIP1	NM_004735.2	0.093	1426	gtgctctttaggcgcatagtgatg	48486	GUCCUUUAGGGCAUUGAUG	817372	UCACUAGCCCUAAAGGACAC	817373
CALM3	NM_005184.1	0.16	538	cagggtcaattatgaagagtttgt	129585	GGUCAUUAUAGAGAGUUUGU	817374	AAACUUCUAAUUAUUGACCUG	817375
DIAPH1	NM_005219.2	0.2	885	cagccgcgtcgtggatggattaaa	116504	GCCGUGUGGAGUAGUUAUAA	817376	UAUCCAUCCAGCAGCGGCGUG	817377
NCL	NM_005381.2	0.036	1276	gagcgagatgcgagaacactttt	33529	GCAGAGUGCGAGAACACUUUU	817378	AAGUUIUCUGCAUCUGCGUC	817379
TOB1	NM_005749.2	0.097	588	accaggttcggctctaccataat	136820	CAAGUUCGCGUCUACCAAAAU	817380	UUUGGUAGAGCCGCAACUUGGU	817381
MADH2	NM_005901.2	0.088	1456	aagcgcgtctatcagctaactaga	133708	GCCGUCUUAUCAGCUAACUAGA	817382	UAGUAGCUGAUAGACGGCUU	817383
GNB2L1	NM_006098.3	0.16	380	caccaccagagcgatgttggtg	125242	CCACCAGAGCGGCAUUCUGG	817384	ACAAUCCGCGUGGUGGUGUG	817385
PPP2R5A	NM_006243.2	0.18	890	gagtatgtttcaactaatcgtg	298747	GUUUGUUUACUAAUCCUGG	817386	ACGAUAGUUGAAACAUAUC	817387
HYOU1	NM_006389.2	0.1	427	tcgaagcctacgtcactgttact	85421	CAAAGCUACGCUAGCUUACU	817388	UAACGUAGCGUAGCUUUGGA	817389
KHDRBS1	NM_006559.1	0.15	1248	aagctacgaagcctattacagc	19623	GGCUACGAGCGCUAUUACAGC	817390	UGUAAUAGCCUUCGUAGCCUU	817391
METAP2	NM_006838.2	0.084	738	atgcctggtagacataacagattta	186558	GCGGUGACACACAGUAUUA	817392	AUACUGUUGUGUCACCGGCAU	817393
CALM1	NM_006888.2	0.4	519	tacgtcacgtcagcaaaactta	129581	CGUCACGUACACACAAAUUA	817394	AGUUUGUACAGCUGGACGUA	817395
TOPBP1	NM_007027.2	0.3	1047	atgcgaagtgcgttaagtgaatca	126366	GCAAGUUGGUAUAGUAUCA	817396	AUUCACUUACGCAACUUGCAU	817397
PIAS1	NM_016166.1	0.37	1704	gccctacgaacttacaaggattag	35123	CUUACGACUUAACAAGGAUAG	817398	AAUCCUUGUAAGUCGUAAGGC	817399
NMT1	NM_021079.3	0.25	1025	ctggcgctgcgaccaa tggaaaca	215454	GGCGUGCGACCAUUGGAAACA	817400	UUUCCAUUGGUGCGAGCCAG	817401
PPP2R4	NM_021131.3	0.28	332	cgcctgactacatcggtatcatcc	298444	CUGACUACUCCGGAUUCUCC	817402	AUGAAUCCGAUAGUAGCAGCG	817403
MSH6	NM_000179.1	0.17	3185	tccggcgactgttctataacttt	16779	GCGCGACUUGUUCUUAUACUUU	817404	AGUUUAAGAACACAGCCGCA	817405
EIF4A1	NM_001416.1	0.16	493	tgccggtgttttgatatactta	25763	GCCGUGUUGUUAUAGCUUA	817406	AGCAUUAACAAACACAGCGCA	817407
ATP2A2	NM_001681.2	0.2	2836	atccccatccccgatgacaatgg	72769	CCCCAUCCCCGAGCAUUGG	817408	AUUGUCAUCCGGUAGUGGGAU	817409
HNRPK	NM_002140.2	0.24	458	ccccgagcgcatattgagtatca	28586	CCGAGCGCAUUAUAGUAUCA	817410	AUACUCAUUAUAGCGCGGG	817411
MSN	NM_002444.2	0.058	1806	agcgcatlgacgaatttgagctt	287504	CGCAUUGACGAUUAUAGUCU	817412	ACUCAAUUCGUCAUUGCCCU	817413



表1G

遺伝子名	refseq_ID	RQ	標的位置	標的配列	配列番号	siRNA-センス	配列番号	siRNA-アンチセンス	配列番号
MAPK6	NM_002748.2	0.16	1854	ttagcctgtacatacaactttg	89971	GGCCUGUACAUAAACACUUG	817414	AGUUUUUUUAGUAGAGCCCAA	817415
MAP2K3	NM_002756.2	0.26	626	tttcaggggacattatcagaga	88970	CUACGGGGACUUAUCAGAGA	817416	UCUGAAUAGUCCCGGAGAA	817417
RDX	NM_002906.2	0.049	43	atcacgtaagagtaactacaat	118854	CAACGUAAGUAUACUACAAU	817418	UGUAGUACUUAUACGUUGAU	817419
BHLHB2	NM_003670.1	0.31	1011	gagaaagatcgccgcaattlaag	1511	GAAAGGAGCGGCGCAUUAAG	817420	UAAUUGCGCGAUCCUUCUC	817421
RIPK2	NM_003821.4	0.38	1028	acctaccagacagtatgatct	99178	CUCACCGACGACGUAUGAUCU	817422	AUCAUACGUGCUGGUGAGGU	817423
HSF1	NM_005526.1	0.1	1137	ccccaccgcccctcatctgactcc	5332	CGCAGCGCCUUAUACUCC	817424	AGUCAUAGAGCGGCGGCGGG	817425
POP4	NM_006827.1	0.099	639	gtgaacggtctgcgaagaatttc	53540	GAACGGGUCUGCGAAGAAGUUC	817426	ACUUCUCCGACAGACCGUUCAC	817427
DDX18	NM_006773.3	0.28	196	cigacccatcggaaactcaaaa	50595	GACCCUAGCGGAACUCAAAA	817428	UUGAGUUUCCGAUAGGGUCAG	817429
DDX24	NM_020414.3	0.24	2275	aaggagcgaatcctgttagctcg	50750	GGAGCGAUCCGUUAGGUCUG	817430	AGCUAAACGGAUCCGCUCCUU	817431
IFNGR1	NM_000416.1	0.18	220	tacctagagtaagaactatg	124614	CCGUAGAGGUAAGAACUUAUG	817432	UAGUUCUUUACCUUACCGUA	817433
AK1	NM_000476.1	0.25	517	agcggctggagacctattacaag	71895	CGGUGGAGACCUUUAACAAG	817434	UGUAAUAGGUCUCCAGCGGU	817435
SERPINE1	NM_000602.1	0.4	786	cagcccgatggccattactacg	183595	CGCCCAUGGCCAUUACUACG	817436	UAGUAAUAGGCAUCCGGGUG	817437
IGF2R	NM_000876.1	0.14	6206	acggagtcctctactatataaat	206285	GGACUCUCGUUUAUUAUAAU	817438	UUAUUAUAGUACGAGAUCCGU	817439
RRM1	NM_001033.2	0.25	1880	caggcccatcagaaacctatga	226213	GGCCCAUACGAAACCUAUGA	817440	AUAGUUUUGUAGGGGCCUG	817441
CSNK1G2	NM_001319.5	0.34	228	gagctcgccttaggaagaatct	77703	GCUCGCCUAGGAAAGAUCU	817442	AUUCUUUCCUAGGGGAGCUC	817443
CDC42	NM_001791.2	0.15	160	tctgatatctacacaacaac	108667	CUGAUUCGUACACAACAAC	817444	UUGUUGUGUAGGAUUCAGGA	817445
CDH2	NM_001792.2	0.23	1737	atgcgggtaccatgttgacaaca	139854	GCUGUACCAUUGUACACAACA	817446	UUGUACAUGGUAUCCGCAU	817447
CLU	NM_001831.1	0.14	161	aagtaagtacgtcaataaggaaa	303887	GUAAGUACGUAUUAAGGAAA	817448	UCCUUUUGAGAGUACUUAU	817449
CSNK1A1	NM_001892.3	0.16	796	agggttaaggcttcacacaaga	77640	GGCUAAAGGCGUACACAAGA	817450	UUUGUAGCAGCCUUUAGCCCU	817451
CSNK1D	NM_001893.3	0.29	657	gtcgaatcgaatcatttca	77650	CGCAUCGAUUAUUAUUAUUA	817452	AAUGAUUUAUUGCAUCCGAC	817453
CTNNA1	NM_001903.2	0.22	653	aacgttcgatactctctatactc	290175	CGUUCGGAUCCUUAUUAUUA	817454	AGUAAUAGGAGUCCGAACGUU	817455
DDR1	NM_001954.3	0.32	1176	ggctatcaggtccactgttaaca	78045	CUAUGCAGGUCACUUAUUA	817456	UUAACAGUGGACUCCUAGCC	817457
PLAGL1	NM_002656.2	0.31	2951	ctcctgtctacccaaatactttt	35406	CCUUGUACCCAAAUAUUAUUA	817458	AGGUUUUUUGGAGGAGGAG	817459
PPM1B	NM_002706.3	0.18	1479	ttgctgcaagcgtaattgtatt	162107	GCUGGCAACCGUAUUAUUAU	817460	UAAUUAUACCGUUGCCGCAA	817461
PTPRF	NM_002840.2	0.14	3438	aggttccgactctctataagta	37154	GUUCCGAGUCCUUAUUAUUA	817462	ACUUAUAGGAGUCCGGAACCU	817463
RPA1	NM_002945.2	0.12	1784	tacaacgaggtctcgaattaa	19015	CAACGACGAGUCCGAUUAUUA	817464	AAUUCGAGACUCCGUGUUA	817465

表1H

遺伝子名	refseq_ID	RQ	標的位置	標的配列	配列番号	siRNA-センス	配列番号	siRNA-アンチセンス	配列番号
SMARCA4	NM_003072.2	0.18	3624	tccgtatcgcggcttttaaatacc	11695	CGUAGCGCGCUUUAUAUACG	817466	UAUUUAAAGCGCGCAUACGCA	817467
YY1	NM_003403.3	0.15	904	gacgacactacattgacaacac	13964	CGACGACUACAUUGAACAAAC	817468	UUGUUCUAUUGUAGUCGUGUC	817469
USP7	NM_003470.1	0.25	1096	ttgtcgtatgttctcgaataag	190309	GUCGAGUUGUCGUAUAUUG	817470	UUAUCGAGCAACACUCGACAA	817471
IKBK	NM_003639.2	0.44	1164	aggccaggcagatataclacaag	254494	CCCCAGGCGUAUUCUACAAG	817472	UGUAGAUUCCGCCUGGGCCU	817473
IQGAP1	NM_003870.3	0.12	2335	tcctgcctcgttactttagttc	121324	GCUGCGUGGUAUUAUAGUUC	817474	ACUAGUAUCCACGCGAGCGA	817475
CREBBP	NM_004380.1	0.19	2205	gagctcgcgtttacataaacaag	2467	GGUCGCGUUAUACAUAACAAG	817476	UGUUUAUUGUAAACGCGACCUC	817477
CSNK1G3	NM_004384.1	0.31	1252	cccaccgaggacgttcaaatgc	77737	CACCGAGGAGCUCAAAUUGC	817478	AUUUGAACGUCUCCGCGGUGG	817479
PPARBP	NM_004774.2	0.17	489	atgtttacatcacgttcagatgt	36486	GUUACAUACGUCGAGUAUUGU	817480	AUAUCUGACGUGAUGUAACAU	817481
SFPQ	NM_005066.1	0.15	1533	atggcacgtttgagtagcaatat	39201	GGCAGCUUUGAGUACGAUAU	817482	AUUCGUACUCAAAACGUGCCAU	817483
ROCK1	NM_005406.1	0.14	1201	agcaatcgttagacttacttctc	99228	CAUCCGUAGUAUUAUUCUUC	817484	AGAUAGUAUUCACGAUUGCU	817485
TP53BP1	NM_005657.1	0.28	396	gacggttaatagtggttcaatga	20875	CGGUAAUAGUGGUGUCAAUGA	817486	AUUGAACCCACUAUACCGGUC	817487
NCOR1	NM_006311.2	0.36	6785	cccgtcaccaggagataaagc	33678	CGCUCACAGGAGGUAUAAGC	817488	UUUAUACUCCUGGUGAGCGGG	817489
TADA3L	NM_006354.2	0.1	1233	ctgaccgaacttgacactaaaga	12451	GACCGAACUGGACACUAAAGA	817490	UUUAGUGUCCAGUUCGUGCAG	817491
CTCF	NM_006565.1	0.25	1786	cagtgatattacgtttgtagaca	2613	GUUGUAUACGCUUUGUACACA	817492	UCUACAAGCGUAAUACACUG	817493
RUVBL2	NM_006666.1	0.086	218	gccggtcggcagtccttattgc	100117	CGGUGGCGCAGUCCUUAUUGC	817494	AUAAGGACUGCCCGACCGGC	817495
PRKDC	NM_006904.6	0.18	11629	atgtataaggcgcttaactgtac	205894	GUUAAGGCGCGCUAUCGUAC	817496	ACCAUUAAGCGCGCUUAUACAU	817497
CNOT7	NM_013354.4	0.12	844	tttagatccttcgattgtttttt	2347	GAGAUCCUUCGAUUGUUUUUU	817498	AAAACAAUCCGAGGAUCUCAA	817499
GSK3A	NM_019884.2	0.14	1477	acccgcttcitcaaacgttttac	84369	CCCGUCCUACACGCUUUAAC	817500	UAAAGCUUUGAGGACGCGGU	817501
XRCC5	NM_021141.2	0.83	1202	tggccatagttcgatatgtttat	20327	GCCAUAGUUCGAUUGCUUUAU	817502	AAGCAUUAUGGAUUGGCCA	817503
APP	NM_000484.1	0.14	1604	ggcctcgtcacgtttcaataag	128991	CCUCCGUCAGGUGUACAUAUG	817504	UAUUGAACACGUGACGAGGCC	817505
ABCC5	NM_005688.1	0.38	4297	ttctagctccgtaggattatag	70574	CUAGGCCGGAUAGGAUUAUG	817506	UAUCCUUAUCGGAGCGUAGAA	817507
NR2F2	NM_021005.2	0.17	1106	ctctactctgtccggatatattt	8466	CGUACCUUGCCGGAUUAUUAU	817508	AUAUUAUCCGGACAGGUACAG	817509
CDK4	NM_000075.2	0.32	388	ttctgaggtaggttttactgaag	76146	CGUGAGGUGGUUUAUUGAGG	817510	UCAGUAAAGCCACCUACCGAA	817511
CLN2	NM_000391.2	0.14	643	ttcctgaagcagatataacttgacc	183713	CGUAGGCGUAUACAUUGACC	817512	UCAGUUGUAUUCGUUACCGA	817513
AAMP	NM_001087.2	0.27	300	tacgagggtcaccatttgcatigc	177411	GGCAGGUCACCUUUGCAUUGC	817514	AUUGCAAAGGUGACCUUGCUA	817515
ACLY	NM_001096.2	0.19	1229	ggcatctctagagcaatttcgaga	71580	CAUCCGAGAGCAAUUGCAGA	817516	UCGAUUGCUUCUACACGAUGCC	817517

表11

遺伝子名	refseq_ID	RQ	標的位置	標的配列	配列番号	sirRNA-センス	配列番号	sirNA-アンチセンス	配列番号
ADD1	NM_001119.3	0.14	255	aggctacttcgacggagtagata	115154	GUACUUCGACCGAGUAGAUGA	817518	AUCUACUGCGGUCAAGUACCU	817519
FLNA	NM_001456.1	0.13	4967	aaccatagccgacgtagatcagt	114101	CCAUGACGGCAGGUUACAGU	817520	UGUUAUCGUGCCGUCUAGGUU	817521
IL13RA1	NM_001560.2	0.077	497	accagtcacacactaacatatac	244096	CAGUCCGACACUAAUUAUAC	817522	AUAGUAGUGUGCGGACUGGU	817523
IL18	NM_001562.2	0.19	679	ttcatcatcgaaggatacttctc	167828	CAUCAUACGAAGGAUACUUC	817524	AAGUUAUCUUGGUUAUGAUGAA	817525
ARF6	NM_001663.2	0.32	730	gccgctctggcggcattactaca	108231	CGCUCUGCGGCAUUAUACUA	817526	UAGUUAUGCCGCCAGACCGCC	817527
ITGB4BP	NM_002212.2	0.13	82	gagcttgcgttcgagaacaactgt	56942	GCUUCGUUGGAGACAACUUGU	817528	AGUUGUUCUGGAACGAGGUC	817529
MYBL2	NM_002466.2	0.093	975	caggagcccatcggtacagatct	7221	GGAGCCCAUCGGUACAGUACU	817530	AUCUGUACCGAUGGGCUCUG	817531
NME2	NM_002512.1	0.045	485	aacttggtgactacaagtcttgt	8178	CUGGUUGACUACAAGUCUUGU	817532	AAGACUUGUAGUCAACCAU	817533
RAP1A	NM_002884.1	0.072	529	aagaaacggcaaggtttgcact	110570	GAACGGCCAGGUUUUGCACU	817534	UGCAAAACCUUGGCGGUUUU	817535
RPA2	NM_002946.3	0.15	289	aacagtgattcgaagaactatgg	19817	CAGUGGAUUCGAAAGCUAUGG	817536	AUAGCUUUCGAAUCCACUUGU	817537
SDC2	NM_002998.3	0.27	1182	aggcacttactaaggagttttat	121066	GCACCUACUAAAGGAGUUUAU	817538	AAAACUCCUUGUAGGUGCCU	817539
SDC4	NM_002999.2	0.14	338	cccacgaaccccaagaactaga	121072	CACCGAACCCAGAAACUACA	817540	UAGUUUCUUGGUUUGGUGGG	817541
TCF12	NM_003205.2	0.17	1972	cgcctacgctgaggatattaa	41688	CUUACCGGUGGGGAUUAUAA	817542	AUAUCCCGCACCGCUAAGCG	817543
TIMP1	NM_003254.1	0.12	364	accgacgaggagtttctcatt	186907	CCACCGAGGAGUUUCUUAU	817544	UGAGAAACUCCUGCGUGCGU	817545
TRA1	NM_003299.1	0.22	827	taggacggggaacgaacttacc	102862	GGACGGGGAACGACAUAUACC	817546	UAAUUGUGUUCUCCGUCUUA	817547
VCL	NM_003373.2	0.09	2111	gtctcggctgctgtatcttact	120054	CUCGGCUGCUGUUAUCUUAU	817548	UAAGAUACGAGCAGCGGAGAC	817549
CXCR4	NM_003467.1	0.37	90	tggaggagatcagatatacact	124591	GAGGGGAUCAGUUAUACACU	817550	UGUAUAUACUGAUCCCUCCA	817551
SUCLG1	NM_003849.1	0.5	127	ttctcggcaacatctctatgttg	110935	CUCGGCAACUUCUUAUUGU	817552	ACAAGAGAUUGUCCGAGAA	817553
MBD2	NM_003927.3	0.1	902	ctggcaaacgatacctcactca	20354	GGCAACCAUCCUCCUACAUA	817554	AUUGAGAGAUUGUUGCGAG	817555
USP13	NM_003940	0.19	2338	ggcactacagcaacgaataata	154317	CACUACGAGCAACGAUAUA	817556	UUAUUGGUUGCUGGUAGUGCC	817557
OSMR	NM_003999.1	0.31	3240	ctccccgaccgagaaatagcagc	34501	CCCCGACCGAGAAUAGCAGC	817558	UGCUUAUUCUGGUGCGGGGAG	817559
GMFB	NM_004124.2	0.12	290	gacaactcgttctcatgtgtat	117415	CAACUCCCUUAUUGUUAU	817560	ACACAUGAAGCGAGGUUUC	817561
EPHA2	NM_004431.2	0.29	1535	gtggaagtagcaggctacttacc	81348	GGAAGUACGAGGUACUUAU	817562	UAGUGACCUUGUACUCCAC	817563
USP11	NM_004651.2	0.089	643	ttcagcatcagatctctatttg	188785	CAGCAUACCGAUUUAUUGG	817564	AUAGAAUCCGUUAGGUGAA	817565
USP9X	NM_004652.2	0.057	3790	gtgggtcgttacagctagtattt	190527	GGGUGGUUACAGGUAGUUAU	817566	AUACUAGGUGUACGAGCCAC	817567
USP14	NM_005151.2	0.1	583	tggcttcagcgcagtagtattact	188886	CCUUCACGGCAUUAUUAU	817568	UAAUAUACUUGCGGCAAGCCA	817569

表1J

遺伝子名	refseq_ID	RQ	標的位置	標的配列	配列番号	siRNA-センス	配列番号	siRNA-アンチセンス	配列番号
USP10	NM_005153.1	0.22	1353	ccccgtggcgctga tcaataaagg	188770	CCGUGGCGUACAUAAGG	817570	UUUUAUUGAUCAGCCACCGGG	817571
USP8	NM_005154.2	0.22	3283	ggagtcgacggagttctctaaa	190459	CCUCCGCGGAUUCUAAAA	817572	UUAGAGAAUCCGUGCGAGCUC	817573
SDCBP	NM_005625.3	0.13	259	tctatctccctcacatggaatc	114855	CUAUCCGUCACGAGGAAUUC	817574	UUUCCAUCCGUGAGGGAUAGA	817575
CAPZA1	NM_006135.1	0.16	101	atgacgttcggctactactta	113977	GACGUCCGCUACUUAUUAU	817576	UUAAGUAGUAGCGGAACGUAU	817577
CAPZA2	NM_006136.2	0.15	762	gacaaatgcggacactacttca	114011	CAUUGCCGACACUACUUAU	817578	AAAGUAGUGUCGACAUUGUC	817579
NFE2L2	NM_006164.2	0.21	324	ttcgtcagttacacactagatga	7735	CGCUCAGUUAACUACUUAU	817580	AUCUAGUUGUACUACGAGGAA	817581
USP16	NM_006447.1	0.19	1205	tgtgtgtaactaactagatga	189070	GUGGUGAACUACUACUUAU	817582	AUACUAGUUGUACUACGAGG	817583
LIM	NM_006457.1	0.19	1333	ctccgatgtgcgccattgtaac	125275	CCGAUGGCGCCCAUUGUAC	817584	UACAUGGCGCACAUCCGAG	817585
ADD3	NM_016824.1	0.14	1732	gacaatcgaacgttaaacacaa	121236	CAUCCGACGUAACAACAAG	817586	UGUUGUUUACGUUGCAUUGUC	817587
MAP2K2	NM_030662.2	0.16	670	gtacggggagatcagcatitgc	88959	GACGGGAGAUACGCAUUGC	817588	AAAUGCUCAUCUCCCGGUCAC	817589
ADH5	NM_000671.2	0.11	685	ggcatttcaaccggttatgtgc	155944	CAUUUACCGGUUAUGGUC	817590	ACCAUAAACCGGUUAAUUGCC	817591
ANXA1	NM_000700.1	0.11	946	cicgcataaggcatitgatcagg	137873	CGCCAUAGGCAUUAUACG	817592	UCAUCAUGCCUUAUGCGGAG	817593
FOLR1	NM_000802.2	0.32	259	tctctacatatagattcaact	179653	CCUACCUAUUAUAGUUAACU	817594	UUGAAUCUUAUAGGUAGGAA	817595
POLR2B	NM_000938.1	0.16	2960	ccctctctatgactattgtctca	36387	CUCUCGUAGUACUUAUGGUA	817596	ACCAUAGUACUACGAGAGGG	817597
CRIP2	NM_001312.2	0.25	90	gtgcacaaagaccgtgtacttgc	156364	GCCACAAGACCGGUUAUUGC	817598	AAGUACACGGUUCUUGGCGAC	817599
POLR2C	NM_002694.2	0.11	153	ttcgattcggagggtcttcatcg	36408	CGAUUCGGAGGUCUUAUUGC	817600	AUGAAGACCGUCCGAAUUGAA	817601
POLR2E	NM_002895.2	0.098	40	gagctaccggtcttggaaaatcc	36425	CGUACCGGUCUUGGAAAUCC	817602	AUUUCCAGACCGCGUACGUC	817603
RFC3	NM_002915.2	0.38	120	tggacggctggactatcacaa	38420	GGACGGCUGGACUUAUACAAG	817604	UGUGAUAGUCCAGCGGUCCCA	817605
RFC4	NM_002916.3	0.19	957	ttcaaggccttactcgattaca	38466	CAAAGCCUACUCCGAUUAACA	817606	UUAUCCGAGUAGCGGUUAACCU	817607
SSB	NM_003142.2	0.1	276	aggttgaaccgtctaacacaga	48020	GUUGAACCGUUAACAACAAGA	817608	UGUUGUAGACGGUUAACCU	817609
HSPA9B	NM_004134.4	0.19	948	ggccttgcctacggcacatttga	85288	CCUUGCUACGGCACAUUGUA	817610	ACAUGUGCCGUAGCAAGGCC	817611
FANCG	NM_004629.1	0.28	1405	ctgctagttagacccttgaatgt	16276	GCUAGUAGAGCCUUAUUGU	817612	AUUCAAGCCUACACUAGGCG	817613
POLR2K	NM_005034.2	0.17	182	gtggaatacagaataatgtacaag	36435	GGAUACAGAUUAUUGUACAAG	817614	UGUACAUUAUUGUUAUCCAC	817615
PRCP	NM_005040.2	0.043	970	tggcaatgttggactatccttat	187207	GCAUUGGUGGACUUAUUAU	817616	AAGGAUAGUCCACCAUUGCCA	817617
HSPA5	NM_005347.2	0.21	1292	gtggtctgactcgaattccaag	85234	GGCUGACUCCAAUUAUCCAAAG	817618	UUGGAUUCGAGCGGAGCCAC	817619
POLR2H	NM_006232.2	0.099	262	gtcatagctagctacccttga	159134	CAUACCUAGUACCUUUAUAGA	817620	AUACAAGGUAGUAGGUAGAC	817621

表1K

遺伝子名	refseq_ID	RQ	標的位置	標的配列	配列番号	sirNA-センス	配列番号	sirNA-アンチセンス	配列番号
POLR2I	NM_006233.4	0.11	145	acgcgtccggaactgtgattac	9602	GGCUGCCGGAACUGUGAUUAC	817622	AAUCACAGUUCGCGCACGGCU	817623
POLR2J	NM_006234.3	0.15	359	gcgcttttcgggtggccataaaag	36430	GCUUUCGGUGGCCCAUAAAAG	817624	UUUAUGGCCACCCGAAAGCGC	817625
RFC5	NM_007370.3	0.23	941	aggggttggcacigcatgatac	38487	GGUUGGCACUGCAUGAUUC	817626	UAUCAUGCAGUGCCAACCCCU	817627
TGFB11	NM_015927.3	0.16	532	gacttccggttcaaaacatct	112567	CUUCCCGGUCAAACCAUCU	817628	AUGGUUUUGAACGCGGAAGUC	817629
PRKWNK1	NM_018979.1	0.1	631	gccgtgggaatgttaacgatgg	97669	CGUGGGAUGUCUACGAUGG	817630	AUCGUUAGACAUUCCACCGGC	817631
POLR2F	NM_021974.2	0.052	105	tggcgacgactttgatgtgg	36427	GGCAGCACUUUGAUGAUGUGG	817632	ACAUCAUCAAAGUGGUGCCA	817633
NME1	NM_000269.2	0.045	185	agccttttgagcagaaaggattc	94844	CGUUUGAGCAGAAAGGAUUC	817634	AUCCUUUCUGCUCAAACCGCU	817635
PEA15	NM_003768.2	0.15	406	ccgtcccgacttactcactatgg	134551	GUCCUGACCUACUCACUAUGG	817636	AUAGUGAGUAGGUCAGCAGCG	817637
ARHGDI	NM_004309.3	0.17	438	ttccggttaaccgagagatagt	129087	CCGGGUAAACCGACAGAUAGU	817638	UAUCUCUGGUUAAACCCGAA	817639
ESRRA	NM_004451.3	0.3	1029	ggccttcgtaggacttagtcc	3459	CCUUGCGUGAGGACUUAUCC	817640	ACUAAGUCCUCACGGAAGGCC	817641
CAV1	NM_001753.3	0.13	702	cagtcacacgacctgtctattc	289019	GUCCAUCAGCCGUGUCUAUUC	817642	AUAGACACGGCUGAUGCAGUG	817643
MKI67	NM_002417.2	0.17	558	cacgtctgtctcaagatctagc	91497	CGUCGUGUCUACAAGUCUAGC	817644	UAGAUCUUGAGACACGACGUG	817645
CDKN1B	NM_004064.2	0.41	929	ctgcaaccgacgattctctact	219267	GCAACCGACGAUUCUUCUAGU	817646	UAGAAGAUCUGGUGGUGGAG	817647
ERBB2	NM_004448.1	0.17	3386	aaggggtgcctccgatgtattt	81940	GGGGUGGUGCCCGAUGUAUUU	817648	AUACAUGGAGGACGACCCCUU	817649
MXI1	NM_005962.2	0.14	920	cacagcagcctgccgagattgg	33013	CAGCAGCCUGCCGAGAUUUGG	817650	AUAUCUGGACGCGUGCUGUG	817651

### 産業上の利用の可能性

以上のように、本発明にかかるポリヌクレオチドは、標的遺伝子に対して高いRNA干渉効果を有するとともに、標的遺伝子と関係のない遺伝子についてRNA干渉を生じる危険性が非常に小さいため、発現を抑制しようとする標的遺伝子  
5 のみに特異的にRNA干渉を生じさせることができる。したがって、本発明は、RNA干渉を利用する試験、治療方法等に好適に利用することができ、哺乳類などの高等動物、特にヒトを対象とするRNA干渉を行う際に特に有効性を発揮するものである。

- 10     なお、本出願の配列表は817651個の配列の情報を含む。電子ファイルの容量が余りに大きく(200MB近く)、コンピューター環境によっては作業が著しく困難、または不可能になるため、便宜上電子ファイルを2つに分けた。YCT1039 sequence listing(1)は、書誌事項と配列番号1ないし70000の情報を、YCT1039 sequence listing(2)は、配列番号700001ないし817651の情

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## 請求の範囲

1. 目的生物の遺伝子の中から選ばれる標的遺伝子について、RNA干渉を生じさせるポリヌクレオチドであって、

5 少なくとも2本鎖領域を有し、

前記2本鎖領域における一方の鎖が、標的遺伝子の塩基配列中に含まれる、下記(a)から(d)の規則:

(a) 3'末端の塩基が、アデニン、チミンまたはウラシルであり;

(b) 5'末端の塩基が、グアニンまたはシトシンであり;

10 (c) 3'末端の7塩基の配列において、アデニン、チミンおよびウラシルからなる群より選ばれる1種または2種以上の塩基がリッチであり;

(d) 塩基数が、細胞毒性を生じさせずにRNA干渉を生じさせ得る数であるに従う規定配列と相同な塩基配列からなり、そして

15 前記2本鎖領域における他方の鎖が、前記規定配列と相同な塩基配列と相補的な配列を有する塩基配列からなる

ことを特徴とするポリヌクレオチド。

2. 前記規定配列と相同な塩基配列の少なくとも80%以上の塩基が、前記規定配列の塩基配列と一致することを特徴とする請求項1に記載のポリヌクレオチド。

20 3. 前記規則(c)において、7塩基のうち少なくとも3塩基以上がアデニン、チミンおよびウラシルからなる群より選ばれる1種または2種以上であることを特徴とする請求項1または2に記載のポリヌクレオチド。

4. 前記規則(d)において、塩基数が13~28であることを特徴とする請求項1~3のいずれか一項に記載のポリヌクレオチド。

25 5. 前記規定配列が、さらに下記(e)の規則:

(e) 10塩基以上グアニンまたはシトシンが連続する配列を含まないに従う配列であることを特徴とする請求項1~4のいずれか一項に記載のポリヌクレオチド。

6. 前記規定配列が、さらに下記(f)の規則:

(f) 目的生物の全遺伝子配列のうち、標的遺伝子以外の他の遺伝子の塩基配列中に、当該規定配列と90%以上の相同性を有する配列が含まれないに従う配列であることを特徴とする請求項5に記載のポリヌクレオチド。

7. 前記規定配列が、配列表配列番号47～配列番号817081のいずれかに記載の塩基配列からなることを特徴とする請求項6に記載のポリヌクレオチド。

8. 前記規定配列が、図46の標的配列の欄に記載された配列であることを特徴とする請求項6に記載のポリヌクレオチド。

9. 配列番号817102ないし817651のいずれかの塩基配列を有することを特徴とする請求項6に記載のポリヌクレオチド。

10. 2本鎖ポリヌクレオチドであることを特徴とする請求項1～9のいずれか一項に記載のポリヌクレオチド。

11. 前記2本鎖ポリヌクレオチドの一方の鎖が、前記規定配列と相同な塩基配列の3'末端にオーバーハング部を有する塩基配列からなり、

15 前記2本鎖ポリヌクレオチドの他方の鎖が、前記規定配列と相同な塩基配列と相補的な配列の3'末端にオーバーハング部を有する塩基配列からなることを特徴とする請求項10に記載のポリヌクレオチド。

12. ヘアピン構造を有する1本鎖ポリヌクレオチドであり、

20 前記2本鎖領域における一方の鎖の3'末端と、前記2本鎖領域における他方の鎖の5'末端とを連結するループ部を有することを特徴とする請求項1～9のいずれか一項に記載のポリヌクレオチド。

13. 発現を抑制しようとする標的遺伝子の発現系に導入するポリヌクレオチドの選択方法であって、

少なくとも2本鎖領域を有し、

25 前記2本鎖領域における一方の鎖が、標的遺伝子の塩基配列中に含まれる、下記(a)から(f)の規則：

(a) 3'末端の塩基が、アデニン、チミンまたはウラシルであり；

(b) 5'末端の塩基が、グアニンまたはシトシンであり；

(c) 3'末端の7塩基の配列において、アデニン、チミンおよびウラシルから



なる群より選ばれる 1 種または 2 種以上の塩基がリッチであり；

(d) 塩基数が、細胞毒性を生じさせずに RNA 干渉を生じさせ得る数であり、；

(e) 10 塩基以上グアニンまたはシトシンが連続する配列を含まず；

- (f) 目的生物の全遺伝子配列のうち、標的遺伝子以外の他の遺伝子の塩基配列中に、当該規定配列と 90 % 以上の相同性を有する配列が含まれない
- 5 従う規定配列と相同な塩基配列からなり、そして、

前記 2 本鎖領域における他方の鎖が、前記規定配列と相同な塩基配列と相補的な配列を有する塩基配列からなるポリヌクレオチドを選択することを特徴とするポリヌクレオチドの選択方法。

- 10 14. 前記選択したポリヌクレオチドから、さらに、前記標的遺伝子の規定配列と相同な塩基配列が、前記標的遺伝子以外の他の遺伝子の塩基配列とのミスマッチ数が少なくとも 3 塩基であり、かつ、当該少なくとも 3 塩基のミスマッチを有する塩基配列を有する他の遺伝子の数が最も少ない配列であるポリヌクレオチドを選択することを特徴とする請求項 13 に記載のポリヌクレオチドの選択方法。
- 15

15. 請求項 1 ～ 12 のいずれか一項に記載のポリヌクレオチドを、発現を抑制しようとする標的遺伝子の発現系に導入して標的遺伝子の発現を抑制することを特徴とする遺伝子発現抑制方法。

16. 請求項 13 または 14 に記載の方法により選択されたポリヌクレオチドを、発現を抑制しようとする標的遺伝子の発現系に導入して標的遺伝子の発現を抑制することを特徴とする遺伝子発現抑制方法。
- 20

17. 50 % 以下に発現を抑制することを特徴とする請求項 15 または 16 に記載の遺伝子発現抑制方法。

18. 医薬的に有効な量の、請求項 1 ～ 12 のいずれか一項に記載のポリヌクレオチドを含む、医薬用組成物。
- 25

19. 図 46 の関連疾患名の欄に記載の疾患を治療または予防するための、請求項 18 に記載の医薬用組成物。

20. 図 46 の遺伝子名の欄に記載された遺伝子に関連する疾患を治療または予防するための、請求項 18 に記載の医薬用組成物。

2 1. 以下1) - 9) のいずれかに属する遺伝子が関与する疾患を治療または  
予防するための、請求項18に記載の医薬組成物

1) アポトーシスに関与している遺伝子；

2) ホスファターゼおよびホスファターゼ活性に関与している遺伝子；

5 3) 細胞周期に関与している遺伝子；

4) レセプターに関与している遺伝子；

5) イオンチャネルに関与している遺伝子；

6) シグナル伝達系に関与している遺伝子；

7) キナーゼおよびキナーゼ活性に関与している遺伝子；

10 8) 転写制御に関与している遺伝子；あるいは

9) Gタンパク質共役レセプターまたはGタンパク質共役レセプターに関与し  
ている遺伝子。

2 2. 図46の配列番号(ヒト)または配列番号(マウス)の欄に記載の配列  
番号のいずれかの塩基配列を標的配列とするポリヌクレオチドを含む、請求項1  
15 8ないし21のいずれか一項に記載の医薬組成物。

2 3. 表1の遺伝子名の欄に記載された遺伝子に関連する疾患を治療または予  
防するための、請求項18に記載の医薬組成物。

2 4. 膀胱癌、乳癌、結腸直腸癌、胃癌、肝細胞癌、肺癌、黒色腫、卵巣癌、  
膵癌、前立腺癌、口腔癌、皮膚癌並びに甲状腺癌から選択される、いずれかの癌  
20 を治療または予防するための、請求項18または23に記載の医薬組成物。

2 5. 配列番号817102ないし817651のいずれかの塩基配列を有す  
るポリヌクレオチドを含む、請求項18、23または24のいずれか一項に記載  
の医薬組成物。

2 6. 請求項1～12のいずれか一項に記載のポリヌクレオチドを含む、標的  
25 遺伝子の発現を抑制するための遺伝子発現抑制用組成物。

2 7. 標的遺伝子が、図46の関連疾患名の欄に記載の疾患のいずれかの疾患  
に関連する、請求項26に記載の遺伝子発現抑制用組成物。

2 8. 標的遺伝子が、図46の遺伝子名の欄に記載された遺伝子のいずれかで  
ある、請求項26に記載の記載の遺伝子発現抑制用組成物。

29. 標的遺伝子が、以下1) - 9) のいずれかに属する遺伝子である、請求項26に記載の記載の遺伝子発現抑制用組成物

- 1) アポトーシスに関与している遺伝子；
- 2) ホスファターゼおよびホスファターゼ活性に関与している遺伝子；
- 5 3) 細胞周期に関与している遺伝子；
- 4) レセプターに関与している遺伝子；
- 5) イオンチャネルに関与している遺伝子；
- 6) シグナル伝達系に関与している遺伝子；
- 7) キナーゼおよびキナーゼ活性に関与している遺伝子；
- 10 8) 転写制御に関与している遺伝子；あるいは
- 9) Gタンパク質共役レセプターまたはGタンパク質共役レセプターに関与している遺伝子。

30. 標的遺伝子が、表1の遺伝子名の欄に記載された遺伝子のいずれかである、請求項26に記載の遺伝子発現抑制用組成物。

- 15 31. 標的遺伝子が、膀胱癌、乳癌、結腸直腸癌、胃癌、肝細胞癌、肺癌、黒色腫、卵巣癌、膵癌、前立腺癌、口腔癌、皮膚癌並びに甲状腺癌から選択される、いずれかの癌に関連する遺伝子である、請求項26に記載の遺伝子発現抑制用組成物。

- 20 32. 医薬的に有効な量の、請求項1～12のいずれか一項に記載のポリヌクレオチドを投与することを含む、図46の関連疾患名の欄に記載の疾患を治療または予防するための方法。

图 1

ヒト配列  
マウス配列

GACACGGACGTCAA**CACCCCTGACCCCGCTTCGTCTATGGAGAGGGCAGGAAGGCCCGCGG**  
GAAACGGATATCAG**CACCCCTGACCCCGCTTCGTCTATGGAGAGGGCAGGAAGGCTCAGG**

\*\* \*\*\*\*\* \*\* \*\*\*\*\* \*\* \*\*\*\*\* \*\* \*\*\*\*\* \*\* \*\*\*\*\* \*\*

↓

5' - CCCUGACCCGCUUCGUCAUGG - 3'  
3' - GUGGGACUGGGCGAAGCAGUA - 5'





NM_000507: <i>Homo sapiens</i> fructose-1,6-bisphosphatase 1 (FBP1)			
NM_019395: <i>Mus musculus</i> fructose bisphosphatase 1 (Fbp1)			
NM_000507	1	ATGGCTGACCAAGCGCCCTTCGACACGGACGTC AACACCCTGACCCGCTTCGTCTGAG	60
NM_019395	1	ATGGCGAACCATGCGCCCTTCGAAACGGATATCAGCACCCCTGACCCGCTTCGTCTGAG	60
*****			
NM_000507	61	GAGGGCAGGAAGGCCCGCGGCACGGGCGAGTTGACCCAGCTGCTCAACTCGCTCTGCACA	120
NM_019395	61	CAGGGCAGGAAGGCTCAGGGCAGGGGGAGTTGACCCAGCTGCTGAATTCGCTCTGCACC	120
*****			
NM_000507	121	GCAGTCAAAGCCATCTCTCGGCGGTGCGCAAGGCGGGCATCGCGCACCTCTATGGCATT	180
NM_019395	121	GCGATCAAAGCCATCTCTGCTGCGGTGCGCCAGGCGGGCATCGCACAGCTCTATGGTATC	180
.. ▼ intron			
NM_000507	181	GCTGGTTCTACCAACGTGACAGGTGATCAAGTTAAGAAGCTGGACGTCCTCTCCAACGAC	240
NM_019395	181	GCTGGCTCAACCAATGTGACTGGGGATCAAGTAAAGAAGCTGGACATACTTTCCAATGAC	240
*****			
NM_000507	241	CTGGTTATGAACATGTTAAAGTCATCCTTGCCACGTGTGTTCTCGTGTGAGAAGAAGAT	300
NM_019395	241	CTGGTGATCAATATGCTGAAGTCGTCTACGCTACCTGTGTTCTTGTGTCTGAAGAAAAC	300
*****			
NM_000507	301	AAACACGCCATCATAGTGAACCGGAGAAAAGGGGTAAATATGTGGTCTGTTTGGATCCC	360
NM_019395	301	ACAAATGCCATCATATCGAACCCTGAGAAGAGGGGCAAAATATGTTGTCTGTTTCGATCCC	360
* * * ▼ intron			
NM_000507	361	CTTGATGGATCTTCCAACATCGATTGCCCTTGTGTCCGTTGGAACCATTTTGGCATCTAT	420
NM_019395	361	CTTGATGGCTCATCCAACATTGACTGCCTTGTGTCCATCGGAACCATTTTGGCATTTAC	420
*****			
NM_000507	421	AGAAAGAAATCAACTGATGAGCCTTCTGAGAAGGATGCTCTGCAACCAGGCCGGAACCTG	480
NM_019395	421	AGAAAGAAAAGTACTGATGAGCCTTCTGAGAAGGATGCTCTGCAAGCCCGGCCGACCTG	480
*****			
NM_000507	481	GTGGCAGCCGGCTACGCACGTGATGGCAGTGCCACCATGCTGGTCCTTGCCATGGACTGT	540
NM_019395	481	GTGGCAGCCGGGTATGCGCTCTATGGCAGTGCCACCATGTTGGTCCTTGCCATGGATTGT	540
*****			
NM_000507	541	GGGGTCAACTGCTTCATGCTGGACCCGGCCATCGGGGAGTTCAATTTGGTGGACAAGGAT	600
NM_019395	541	GGTGTCAACTGCTTCATGCTGGACCCGCTCCATTGGAGAATTCAATATGGTGGACAGGGAC	600
.. ▼ intron			
NM_000507	601	GTGAAGATAAAAAAGAAAGGTAAATCTACAGCCTTAACGAGGGCTACGCCAGGGACTTT	660
NM_019395	601	GTGAAGATGAAGAAGAAAGGTAAATCTACAGCCTTAATGAGGGTTATGCCAAGGACTTT	660
*****			
NM_000507	661	GACCTGCGCCTCACTGAGTACATCCAGAGGAAGAAGTCCCCCAGATAATTTCAGCTCCT	720
NM_019395	661	GACCTGCCATCAATGAGTATCTCCAGAGGAAGAAGTCCCCCGGATGGTTTCAGCCCCC	720
*****			
NM_000507	721	TATGGGGCCCGGTATGTGGGCTCCATGGTGGCTGATGTTTCATCGCACTCTGGTCTACGGA	780
NM_019395	721	TATGGTGCCCGGTATGTGGGCTCCATGGTGGCTGATATTCACCGCACTCTGGTATATGGA	780
*****			
NM_000507	781	GGGATATTCTGTACCCCGCTAACAAGAAGAGCCCCAATGGAAAGCTGAGACTGCTGTAC	840
NM_019395	781	GGGATCTTTTATACCCCGCTAACAAGAAGAGCCCCAAGTGGAAAGCTGCGGCTGCTGTAT	840
*****			
NM_000507	841	GAATGCAACCCCATGGCTACGTGATGAGAAGGCTGGGGGAATGGCCACCACTGGGAAG	900
NM_019395	841	GAGTGCAACCCCATAGCTTATGTGATGAGAAGGCGGTGGGCTCGCCACCAAGGGGGAC	900
..			
NM_000507	901	GAGGCGGTGTTAGACGTCAATCCACAGACATTACCAAGAGGGCGCGGTGATCTTGGGA	960
NM_019395	901	AAAGATATATTAGACATCGTTCCACCGAGATCCACAGAAGGCACCAAGTCGTGATGGGG	960
* * *			
NM_000507	961	TCCCCGACGACGTGCTCGAGTTCTCTGAAGGTGATGAGAAGCACTCTGCCCACTGA	1017
NM_019395	961	TCTCTGAAGATGTGACAGGAGTTCTTGGAGATCTACAGGAAGCAAAAGCCAAGTGA	1017
***			

图 4

```

NM_000507: 36 caccctgacccgcttcgtcatgg
NM_000507: 37 accctgacccgcttcgtcatgga
NM_000507: 38 ccctgacccgcttcgtcatggag
NM_000507:433 actgatgagccttctgagaagga
NM_000507:434 ctgatgagccttctgagaaggat
NM_000507:435 tgatgagccttctgagaaggatg
NM_000507:436 gatgagccttctgagaaggatgc
NM_000507:437 atgagccttctgagaaggatgct
NM_000507:438 tgagccttctgagaaggatgctc
NM_000507:439 gagccttctgagaaggatgctct
NM_000507:440 agccttctgagaaggatgctctg
NM_000507:441 gccttctgagaaggatgctctgc
NM_000507:442 ccttctgagaaggatgctctgca
NM_000507:544 gtcaactgcttcatgctggaccc
NM_000507:545 tcaactgcttcatgctggacccg

```

图 5

```

NM_000507: 36 caccctgacccgcttcgtcatgg 1 1 4 4
NM_000507: 37 accctgacccgcttcgtcatgga 0 1 3 0
NM_000507: 38 ccctgacccgcttcgtcatggag 0 1 3 0
NM_000507:433 actgatgagccttctgagaagga 0 0 4 0
NM_000507:434 ctgatgagccttctgagaaggat 0 1 3 0
NM_000507:435 tgatgagccttctgagaaggatg 1 0 4 0
NM_000507:436 gatgagccttctgagaaggatgc 1 0 4 0
NM_000507:437 atgagccttctgagaaggatgct 0 1 4 0
NM_000507:438 tgagccttctgagaaggatgctc 0 0 3 0
NM_000507:439 gagccttctgagaaggatgctct 1 1 3 0
NM_000507:440 agccttctgagaaggatgctctg 0 1 3 0
NM_000507:441 gccttctgagaaggatgctctgc 1 1 4 4
NM_000507:442 ccttctgagaaggatgctctgca 0 0 3 0
NM_000507:544 gtcaactgcttcatgctggaccc 0 1 2 0
NM_000507:545 tcaactgcttcatgctggacccg 0 0 2 0

```

图 6

Sequences producing significant alignments:			Score (bits)	E Value
ref NM_019395.1	Mus musculus fructose biphosphatase 1 (Fbp1), ...	46	9e-06	
ref NM_000507.2	Homo sapiens fructose-1,6-bisphosphatase 1 (FBP...	46	9e-06	
ref NM_015820.1	Mus musculus heparan sulfate 6-O-sulfotransfera...	30	0.52	
ref NM_003837.1	Homo sapiens fructose-1,6-bisphosphatase 2 (FBP...	30	0.52	
ref NM_145960.1	Mus musculus hypothetical protein MGC19099 (MGC...	28	2.0	
ref NM_010884.1	Mus musculus N-myc downstream regulated 1 (Ndr1...	28	2.0	
ref NM_025405.1	Mus musculus RIKEN cDNA 1110033J19 gene (111003...	26	8.1	
ref NM_029098.1	Mus musculus RIKEN cDNA 1110013E13 gene (111001...	26	8.1	
ref NM_012258.2	Homo sapiens hairy/enhancer-of-split related wi...	26	8.1	
ref NM_018113.1	Homo sapiens lipocalin-interacting membrane rec...	26	8.1	
ref NM_014780.1	Homo sapiens KIAA0076 gene product (KIAA0076), ...	26	8.1	
ref NM_012218.1	Homo sapiens interleukin enhancer binding facto...	26	8.1	
ref NM_004516.1	Homo sapiens interleukin enhancer binding facto...	26	8.1	
ref NM_000875.2	Homo sapiens insulin-like growth factor 1 recep...	26	8.1	
ref NM_001188.1	Homo sapiens BCL2-antagonist/killer 1 (BAK1), mRNA	26	8.1	



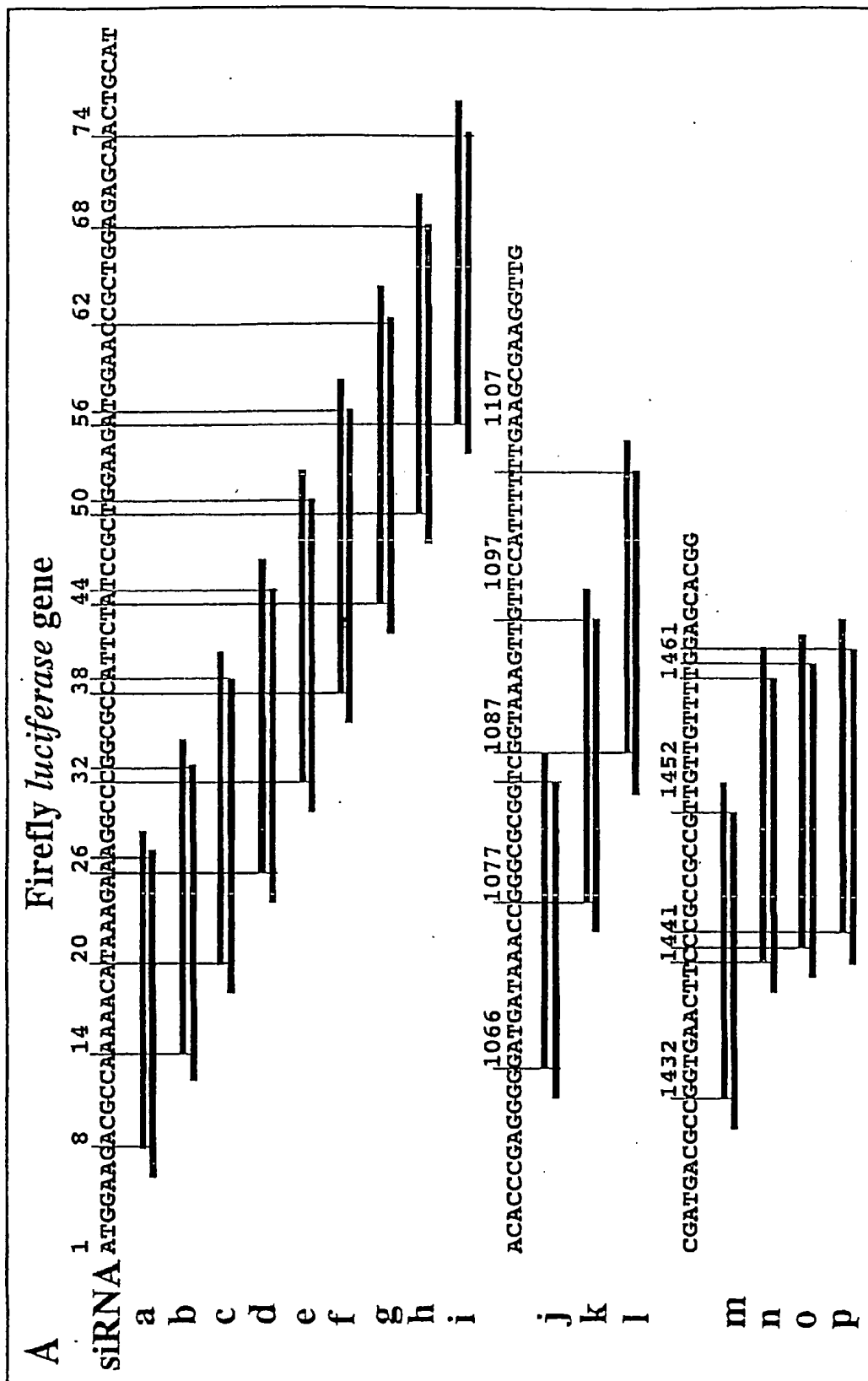
7

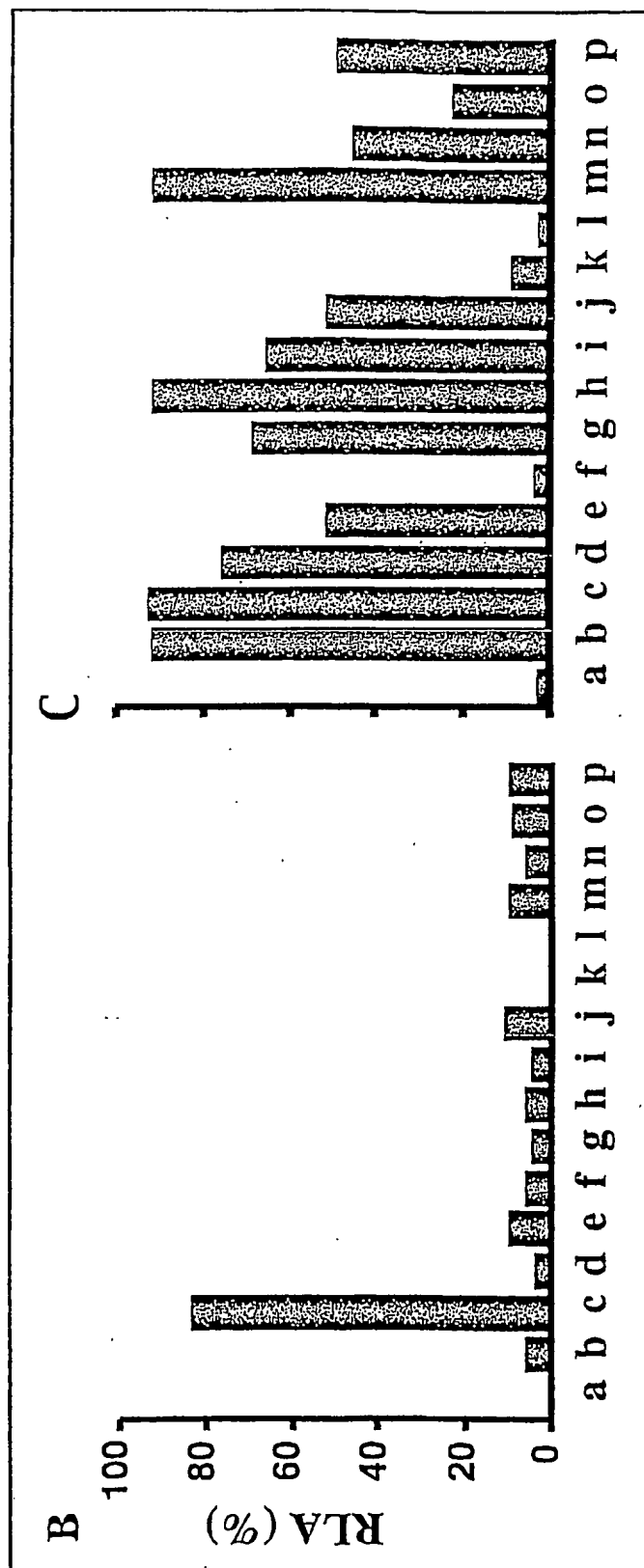
## Sequences producing significant alignments:

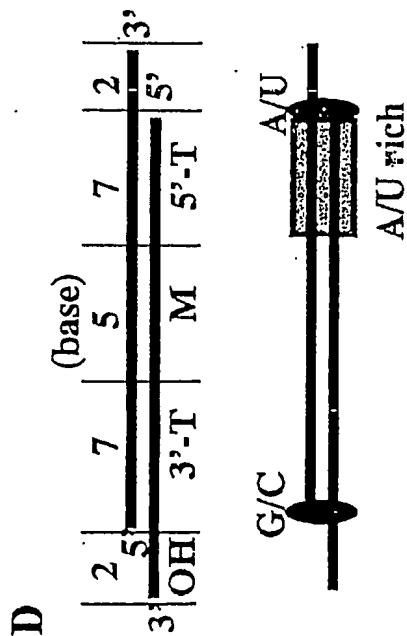
	Score (bits)	E Value
ref NM_019395.1  Mus musculus fructose biphosphatase 1 (Fbp1), ...	46	9e-06
ref NM_000507.2  Homo sapiens fructose-1,6-bisphosphatase 1 (FBP...	46	9e-06
ref NM_007994.1  Mus musculus fructose biphosphatase 2 (Fbp2), ...	36	0.008
ref NM_139045.1  Homo sapiens SWI/SNF related, matrix associated...	32	0.13
ref NM_003070.2  Homo sapiens SWI/SNF related, matrix associated...	32	0.13
ref NM_022026.1  Mus musculus aquaporin 9 (Aqp9), mRNA	30	0.52
ref NM_011834.1  Mus musculus kynurenine aminotransferase II (Ka...	30	0.52
ref NM_008632.1  Mus musculus microtubule-associated protein 2 (...)	30	0.52
ref NM_023266.1  Mus musculus RIKEN cDNA 1200003I07 gene (120000...	30	0.52
ref NM_144499.1  Homo sapiens guanine nucleotide binding protein...	30	0.52
ref NM_000172.2  Homo sapiens guanine nucleotide binding protein...	30	0.52
ref NM_015125.2  Homo sapiens capicua homolog (Drosophila) (CIC)...	30	0.52
ref NM_146249.1  Mus musculus hypothetical protein MGC18735 (MGC...	28	2.0
ref NM_027017.1  Mus musculus RIKEN cDNA 3300002I08 gene (330000...	28	2.0
ref NM_145490.1  Mus musculus similar to zinc finger protein 97 ...	28	2.0
ref NM_145528.1  Mus musculus similar to Hypothetical protein KI...	28	2.0
ref NM_144546.1  Mus musculus expressed sequence AL024077 (AL024...	28	2.0
ref NM_144852.1  Mus musculus hypothetical protein MGC27672 (MGC...	28	2.0
ref NM_080467.1  Mus musculus ATPase, H+ transporting, lysosomal...	28	2.0
ref NM_029813.1  Mus musculus RIKEN cDNA 2210418O10 gene (221041...	28	2.0
ref NM_029583.1  Mus musculus RIKEN cDNA 2810408B13 gene (281040...	28	2.0
ref NM_001231.2  Homo sapiens calsequestrin 1 (fast-twitch, skel...	28	2.0
ref NM_020824.1  Homo sapiens Rho-GTPase activating protein 10 (...)	28	2.0
...		

图 8

NM_000507: 36	caccctgacccgcttcgcatgg	1	1	4	4	59
NM_000507: 37	accctgacccgcttcgcatgga	0	1	3	0	-
NM_000507: 38	ccctgacccgcttcgcatggag	0	1	3	0	-
NM_000507:433	actgatgagccttctgagaagga	0	0	4	0	-
NM_000507:434	ctgatgagccttctgagaaggat	0	1	3	0	-
NM_000507:435	tgatgagccttctgagaaggatg	1	0	4	0	-
NM_000507:436	gatgagccttctgagaaggatgc	1	0	4	0	-
NM_000507:437	atgagccttctgagaaggatgct	0	1	4	0	-
NM_000507:438	tgagccttctgagaaggatgctc	0	0	3	0	-
NM_000507:439	gagccttctgagaaggatgctct	1	1	3	0	-
NM_000507:440	agccttctgagaaggatgctctg	0	1	3	0	-
NM_000507:441	gccttctgagaaggatgctctgc	1	1	4	4	1708
NM_000507:442	ccttctgagaaggatgctctgca	0	0	3	0	-
NM_000507:544	gtcaactgcttcatgctggaccc	0	1	2	0	-
NM_000507:545	tcaactgcttcatgctggacccg	0	0	2	0	-







RLA* siRNA	G/C content (%)				Total
	OH	3'-T	M	5'-T	
0.03 a	UC	U-57	20	14-U	32
0.03 l	AG	C-43	20	29-A	32
0.04 f	CG	G-29	80	43-U	47
0.09 k	GG	C-100	80	14-A	63
0.23 o	AG	G-100	60	14-A	58
		66	52	23	46
0.46 n	AA	G-100	60	29-A	63
0.50 p	GG	G-100	40	29-C	58
0.52 e	GG	G-100	20	57-A	63
0.52 j	GG	C-29	60	100-C	68
0.66 i	UC	U-43	80	57-U	58
		74	52	54	62
0.69 g	GA	U-57	60	43-G	53
0.76 d	CU	U-71	100	29-U	63
0.92 m	GG	C-57	60	100-C	74
0.92 h	CG	A-43	40	86-C	58
0.92 b	GU	U-14	20	71-G	37
0.93 c	GU	A-29	80	100-G	63
		45	60	72	58

図 1 2

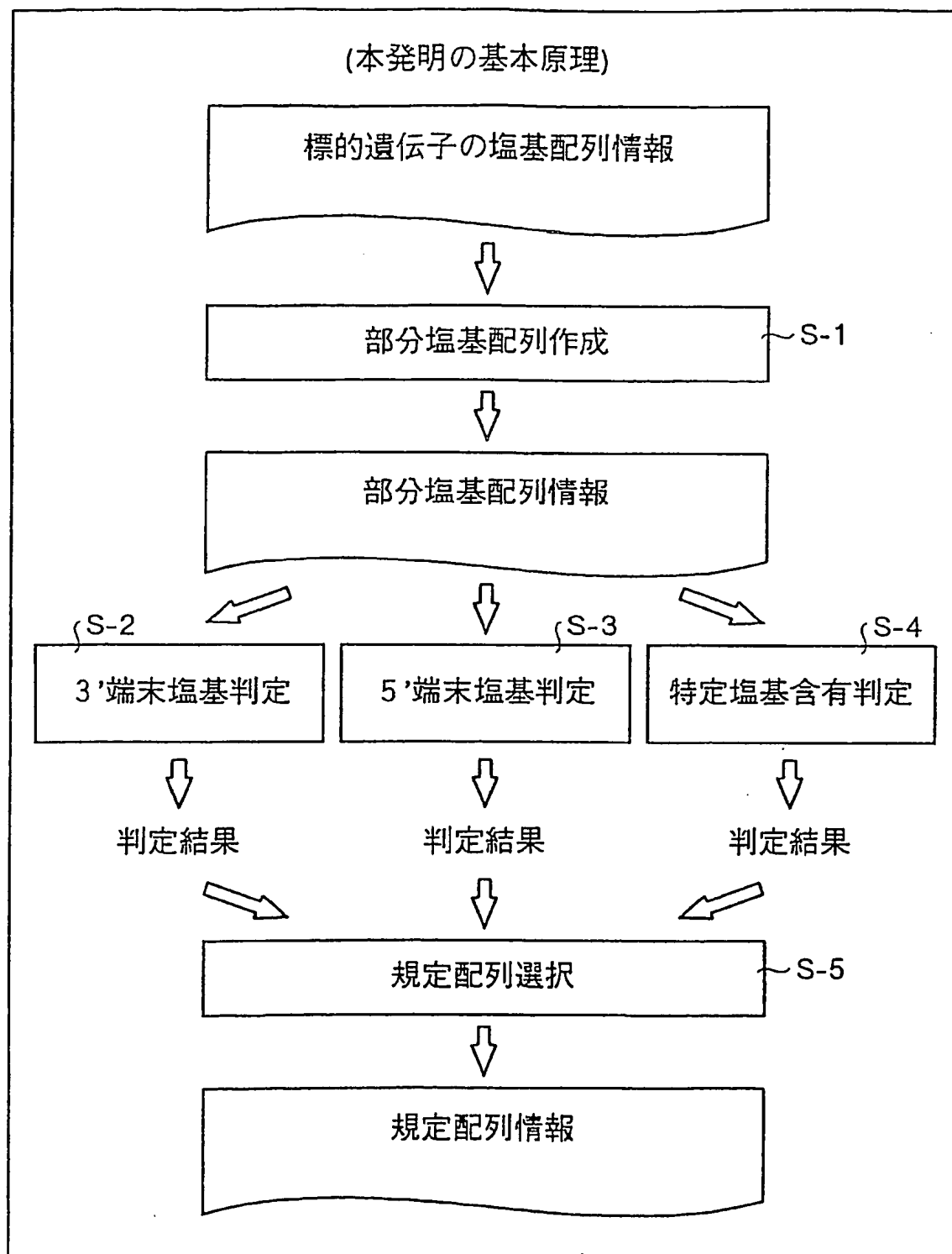


図 13

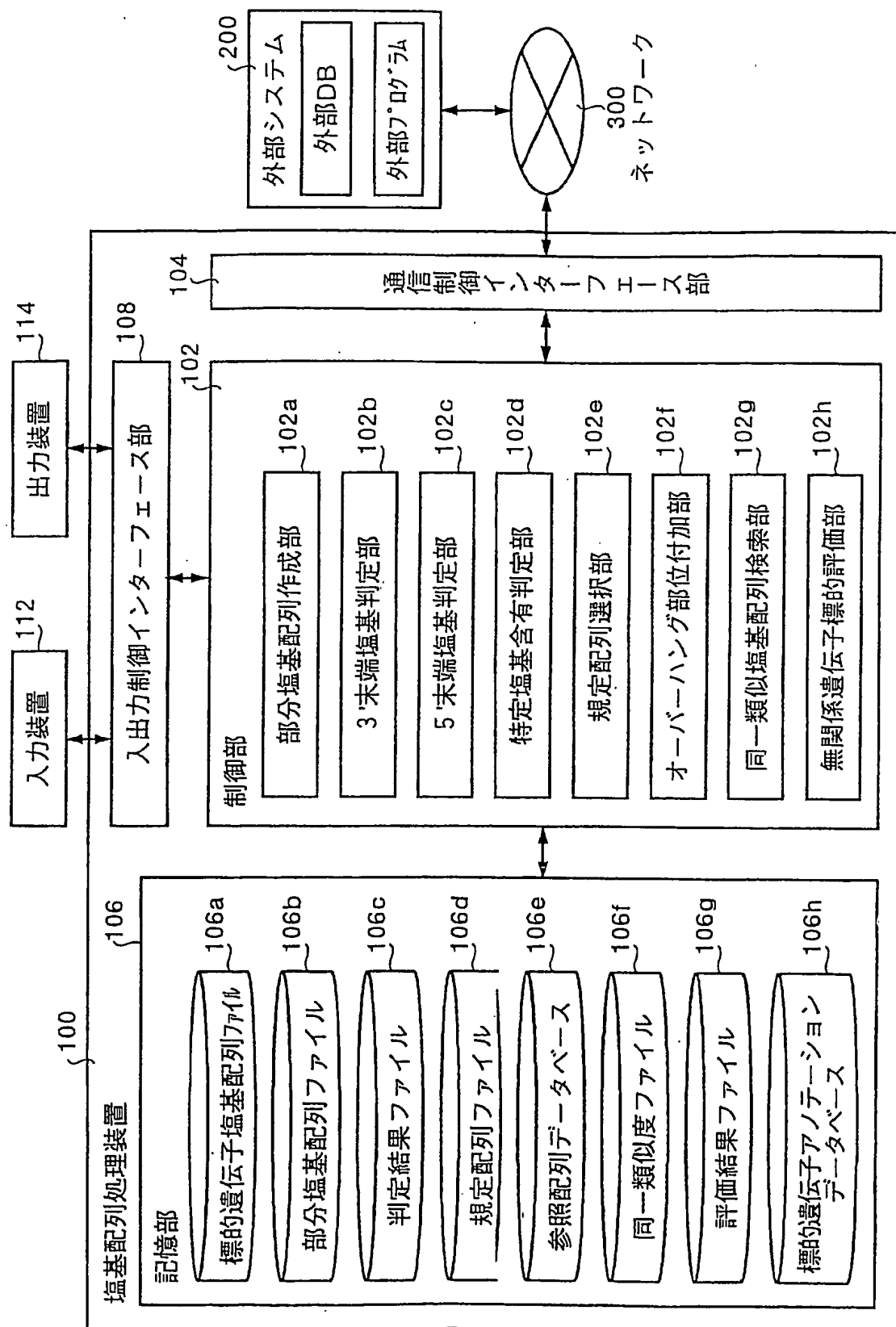


図 1 4

標的遺伝子塩基配列ファイル 106a	
塩基配列識別情報	塩基配列情報
NM_000507	ATGGCTGA ... AGTGA
⋮	⋮

図 1 5

部分塩基配列ファイル 106b		
部分塩基配列 識別情報	部分塩基配列情報	オーバーハング部位 含有情報
NM_000507:36	caccct ... tcatgg	含有
⋮	⋮	⋮



判定結果ファイル 106c				
部分塩基配列 識別情報	3'末端塩基判定 結果	5'末端塩基判定 結果	特定塩基含有判定 結果	総合判定結果
NM_000507:36	1	1	4	4
⋮	⋮	⋮	⋮	⋮

規定配列ファイル 106d	
部分塩基配列識別情報	規定配列情報
NM_000507:36	caccct ... tcatgg
⋮	⋮

図 18

参照配列データベース 106e	
参照配列識別情報	参照塩基配列情報
ref NM_015820.1	caccct ... gcatgg
⋮	⋮

図 19

同一類似度ファイル 106f		
部分塩基配列 識別情報	規定識別情報	同一類似度
NM_000507:36	ref NM_015820.1	0.52
	ref NM_003837.1	0.52
⋮	⋮	⋮

図 20

評価結果ファイル 106g		
部分塩基配列 識別情報	参照配列識別情報	評価情報
NM_000507:36	5.9	非標的
NM_000507:441	170.8	標的
⋮	⋮	⋮

図 2 1

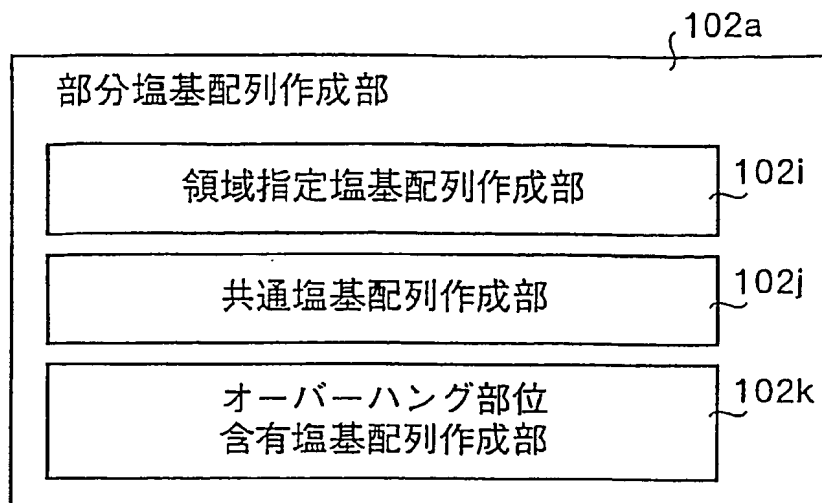


図 2 2

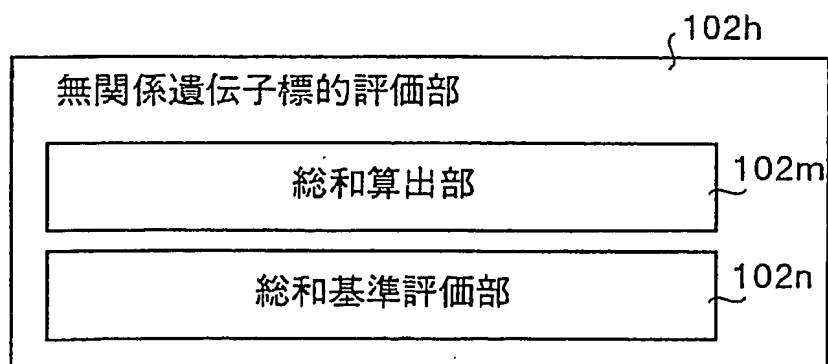


図 23

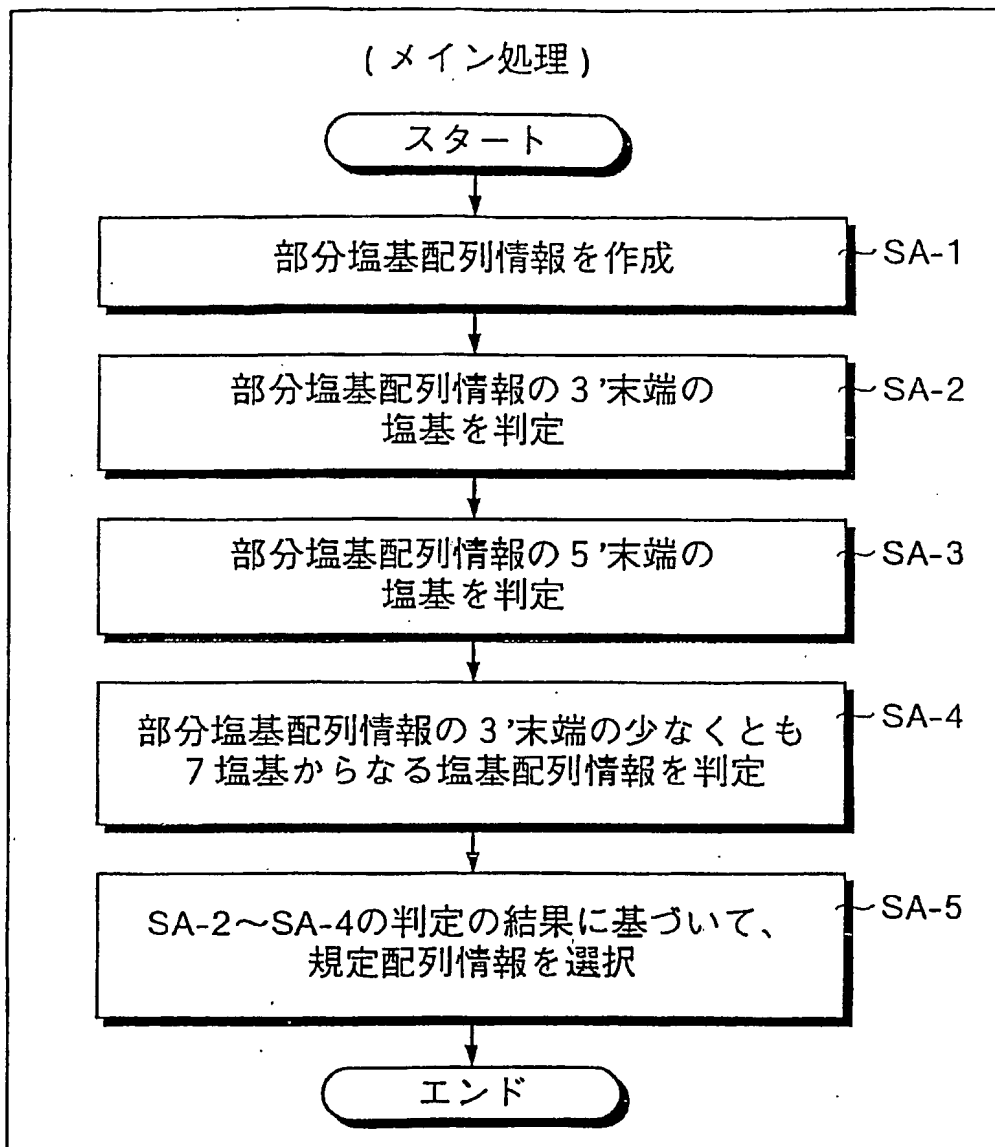
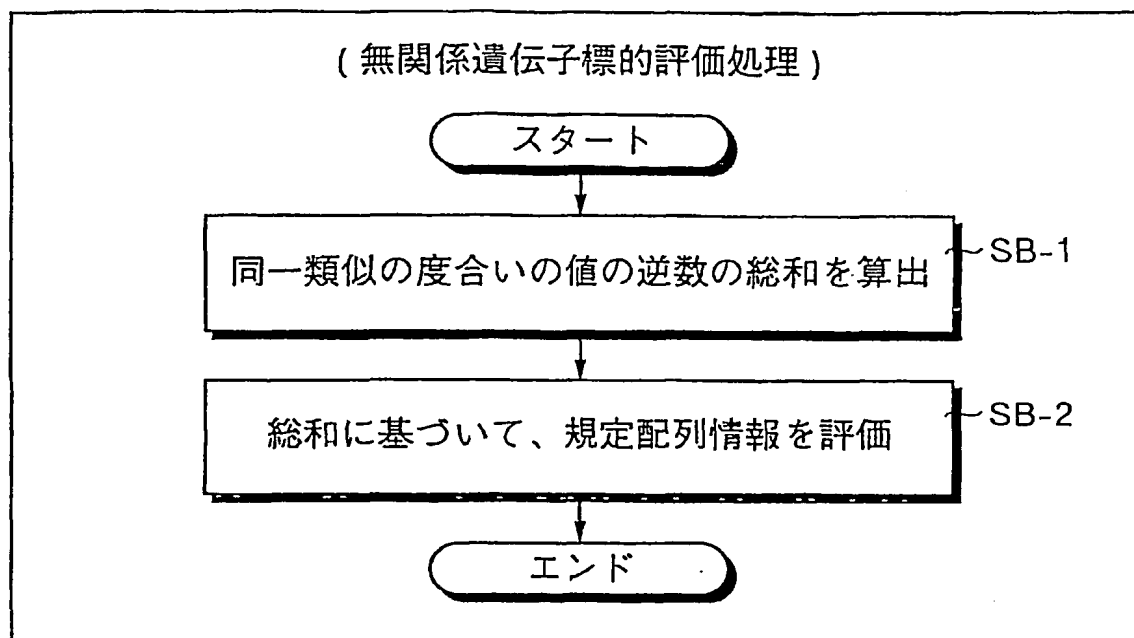


図 2 4



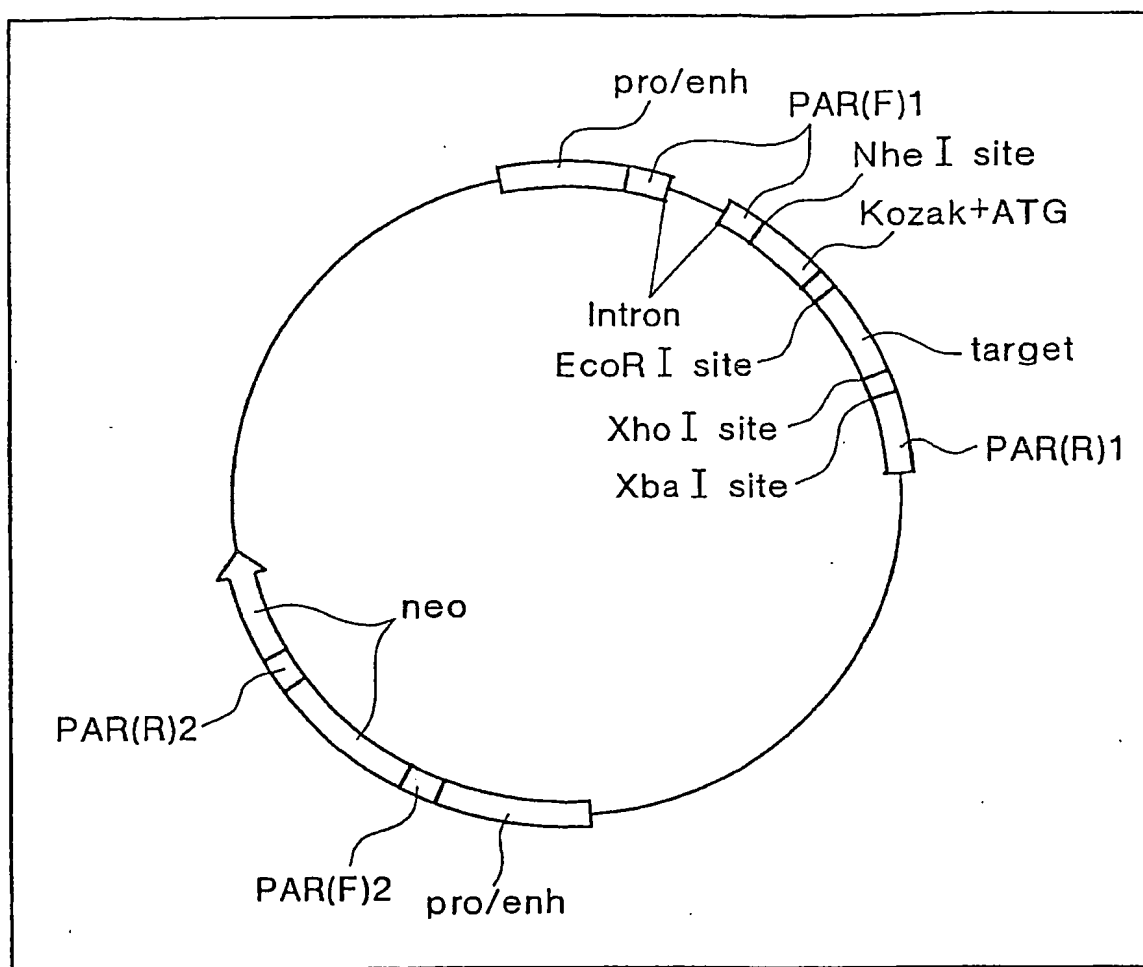


図 2 6

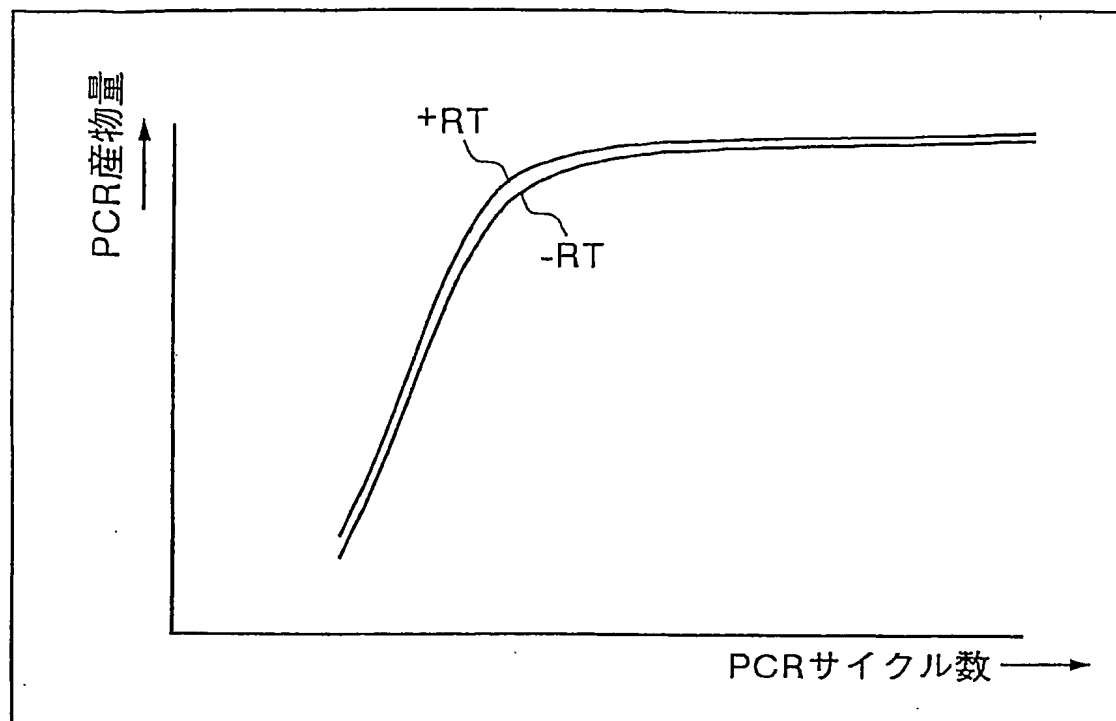


図 2 7

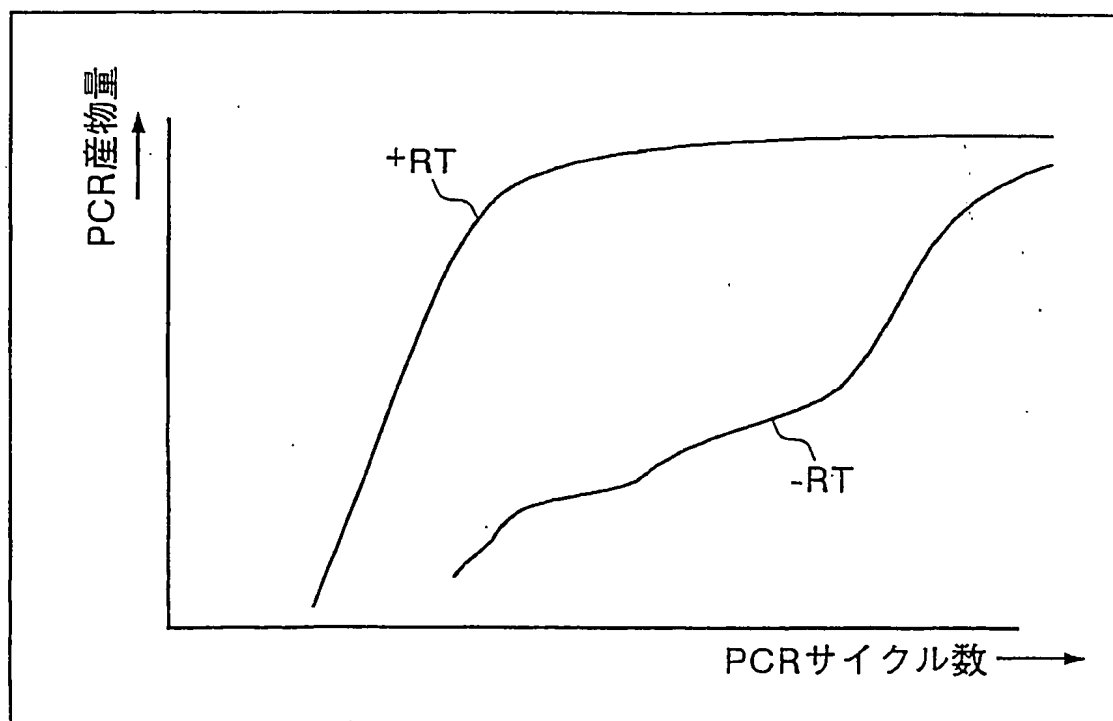




图 28

5' - aggauguucggcgcccgggc -3'  
3' - cguccuacaagccgccgggcc -5'

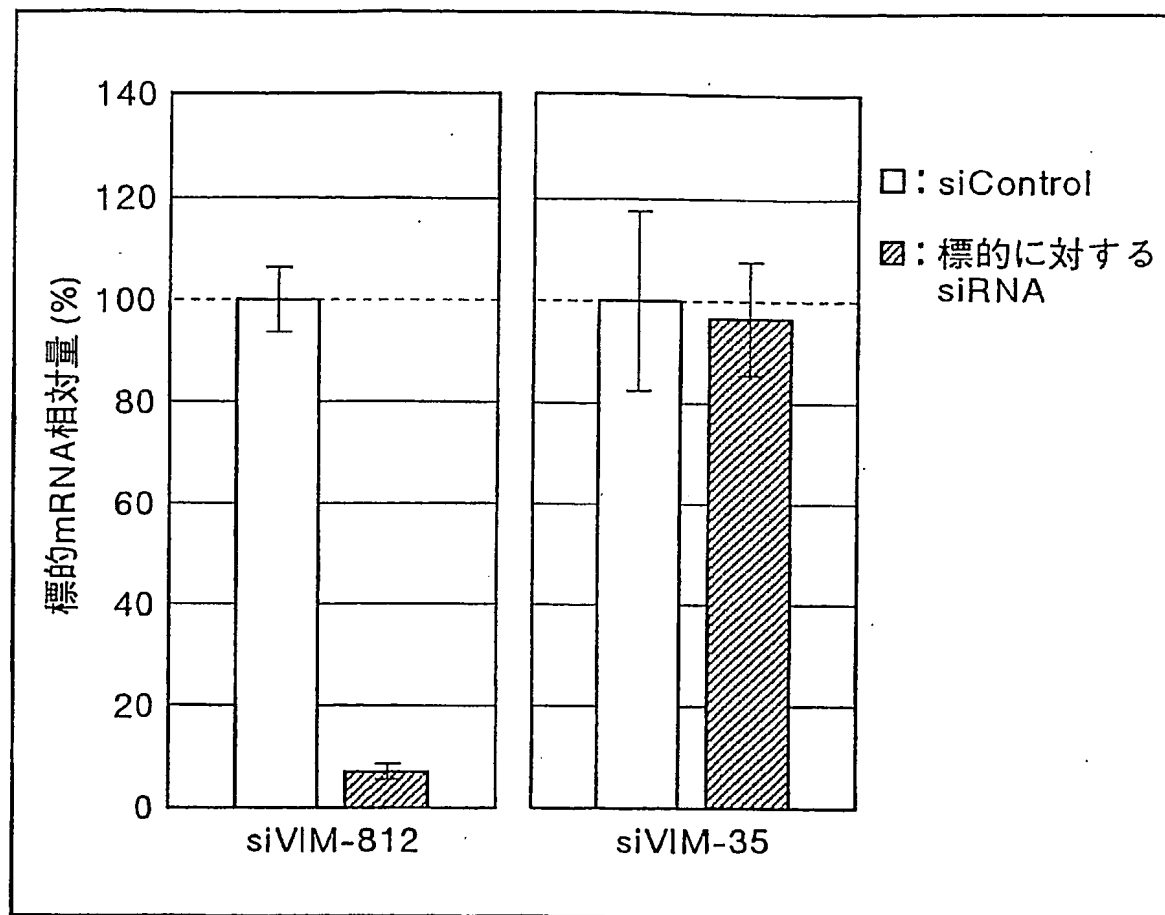
图 29

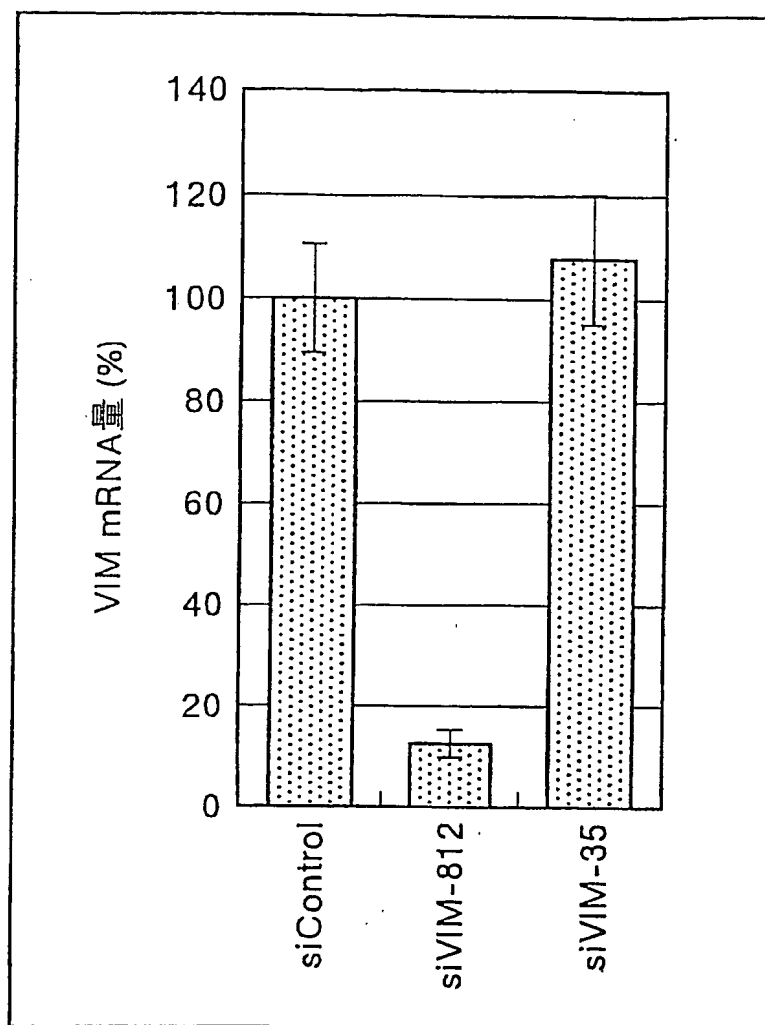
5' - guacgucagcaauaugaaga -3'  
3' - ugcaugcagucguuauacuuu -5'

图 30

5' - CAUUCUAUCCGCUGGAAGAUG -3'  
3' - CGGUAAGAUAGGCGACCUUCU -5'

図 3 1





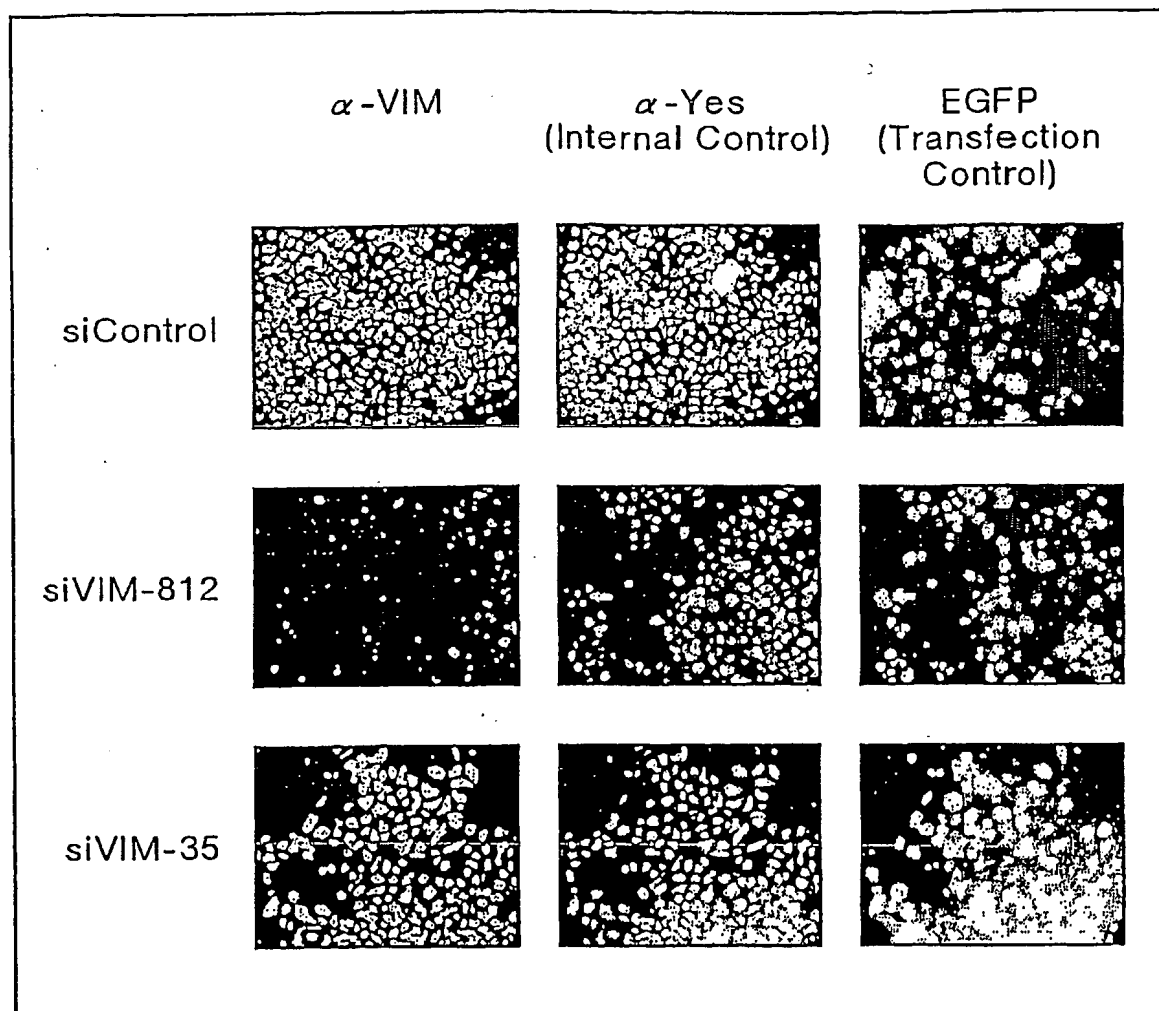
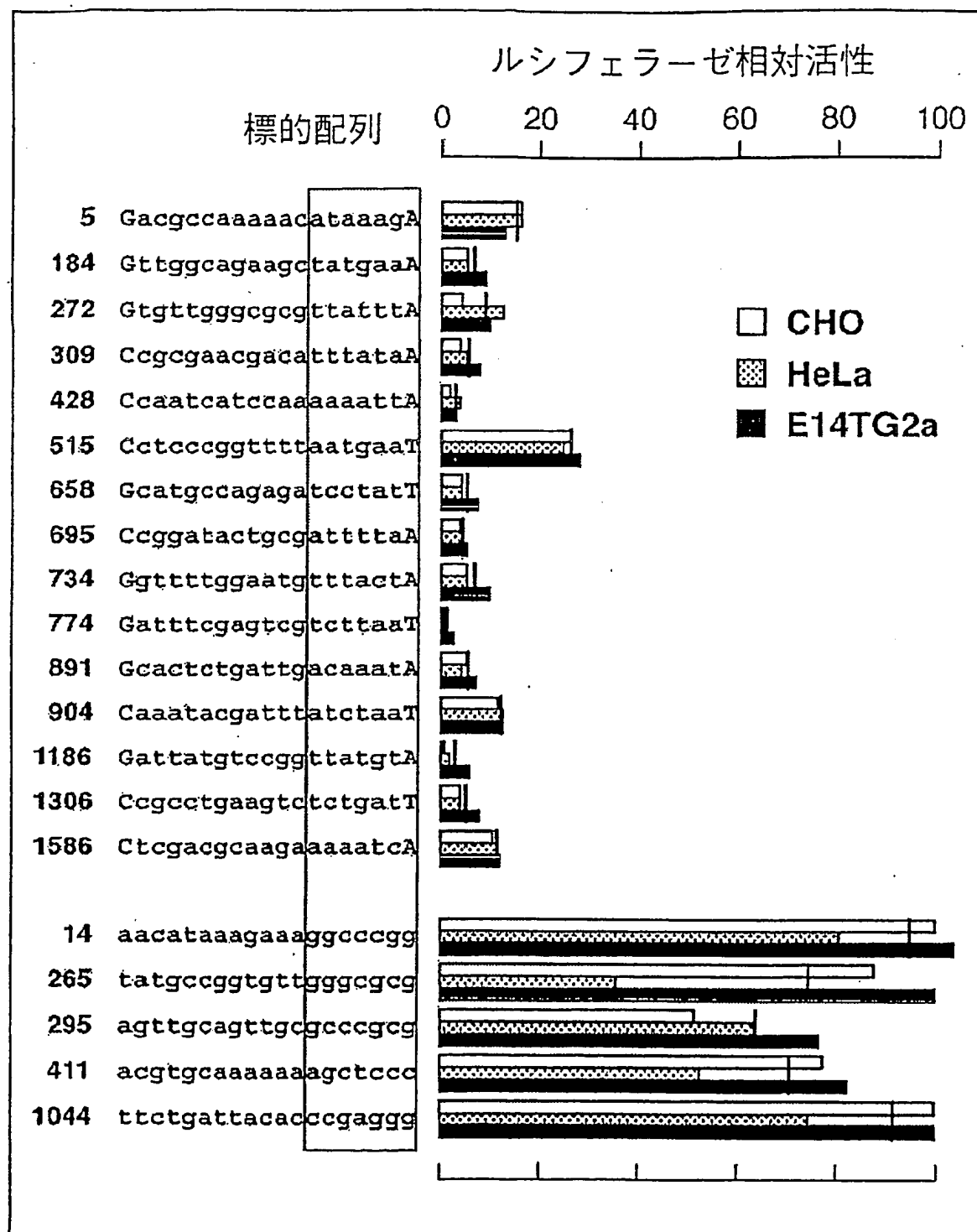


図 3 4



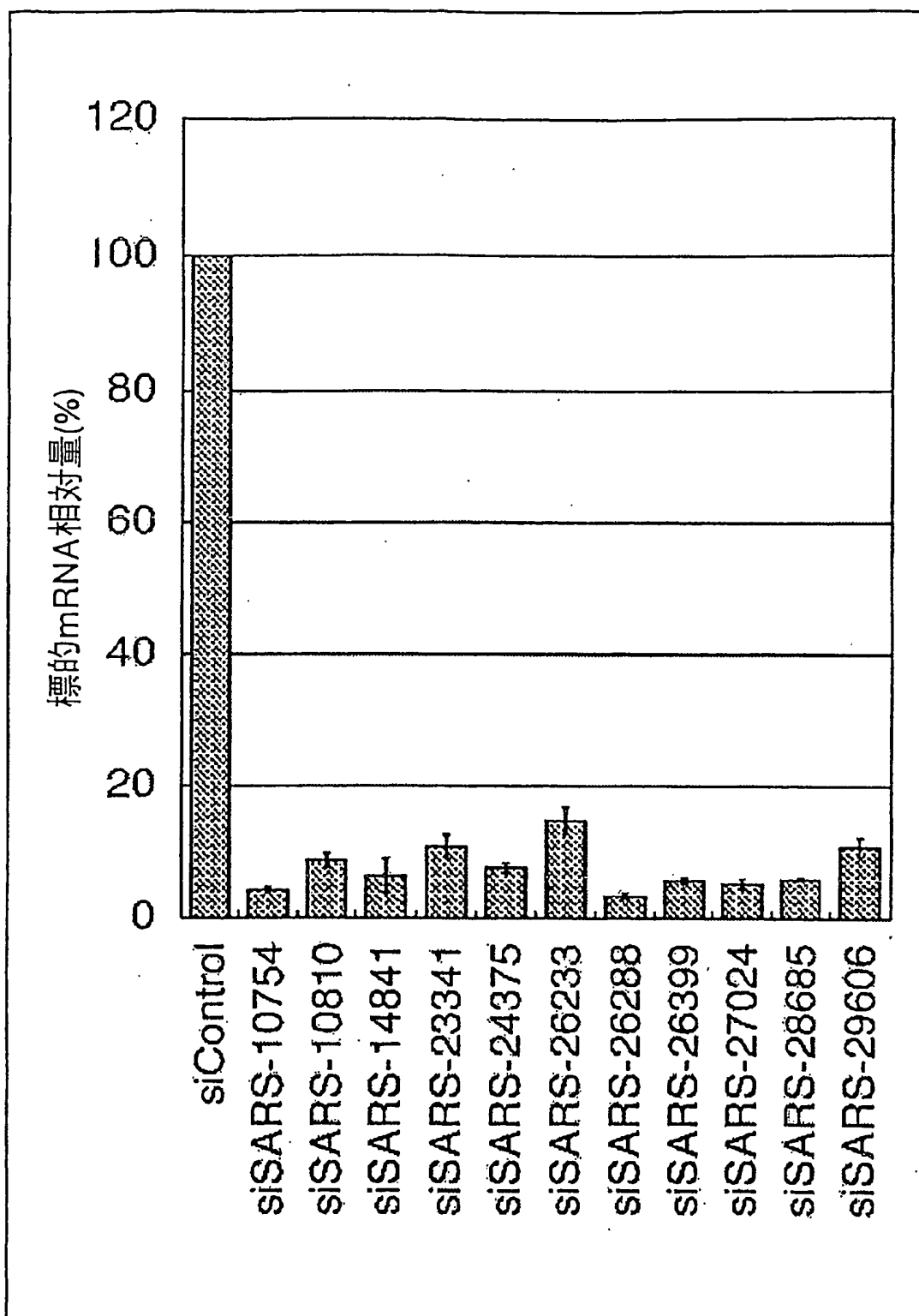


図 3 6

# MismatchのRNAi効果に対する影響 (TREC assay)

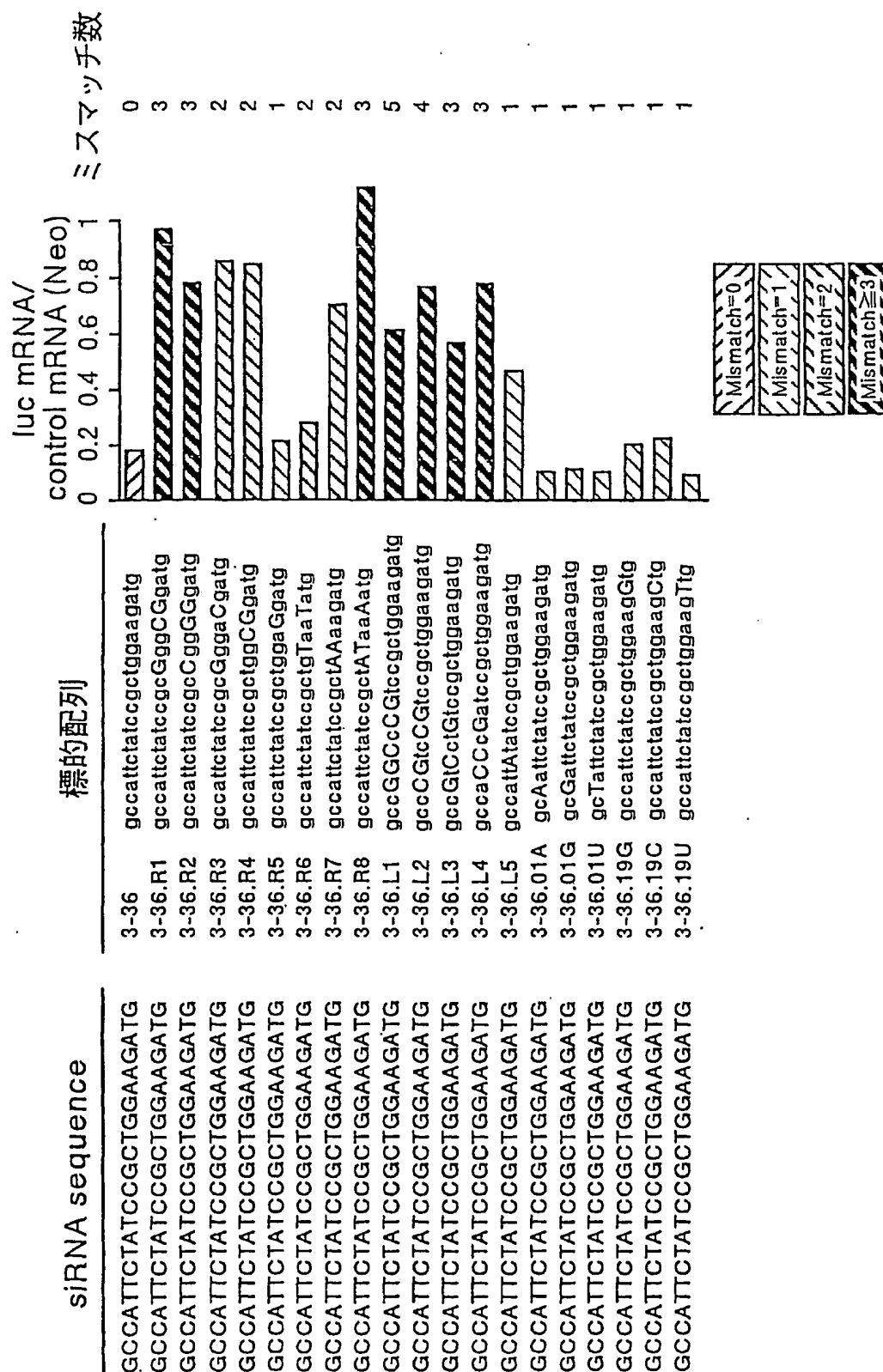


図 3 7

アポトーシスに関与している遺伝子と遺伝子オントロジーにおける  
GO\_IDとの関係

0006917, 0001915, 0001916, 0001914, 0001913, 0006915, 0043276, 0042981, 0043066, 0006916,  
0045476, 0045477, 0045849, 0045850, 0043065, 0001781, 0045767, 0019987, 0045768, 0019050,  
0008624, 0008626, 0008628, 0008627, 0008625, 0008629, 0008630, 0042771, 0008631, 0019051,  
0006920, 0006918, 0016506, 0008189, 0016329



図 3 8

ホスファターゼをコードしている遺伝子と遺伝子オントロジーにおける  
GO\_IDとの関係

0007185, 0045208, 0045209, 0019902, 0019903, 0008157, 0030346, 0042153, 0003998, 0019176,  
0016462, 0043135, 0047624, 0047631, 0019144, 0008715, 0047734, 0000810, 0008486, 0047874,  
0000298, 0004309, 0008894, 0009678, 0004427, 0050072, 0017110, 0043262, 0004382, 0004787,  
0045134, 0017111, 0008094, 0004011, 0008186, 0004010, 0043273, 0050333, 0048253, 0050339,  
0047429, 0047693, 0047840, 0004170, 0004551, 0047710, 0008796, 0004081, 0008803, 0047884,  
0000210, 0047430, 0004636, 0050355, 0008413, 0008768, 0050380, 0050351, 0008893, 0050108,  
0050210, 0016791, 0016302, 0047538, 0050532, 0019143, 0047572, 0003869, 0003993, 0042131,  
0047630, 0004035, 0047647, 0019175, 0004063, 0004083, 0047765, 0019203, 0003850, 0004331,  
0004330, 0042132, 0008877, 0004346, 0004805, 0047846, 0047873, 0047386, 0050530, 0000121,  
0047954, 0043136, 0047383, 0004401, 0004437, 0016312, 0004441, 0030487, 0046030, 0017161,  
0004445, 0008934, 0030351, 0030352, 0004446, 0016314, 0042577, 0016316, 0004438, 0016315,  
0001668, 0004439, 0050084, 0050531, 0047382, 0050115, 0050124, 0019178, 0019204, 0046403,  
0004651, 0008195, 0004606, 0008962, 0050189, 0050192, 0008967, 0008969, 0004721, 0004722,  
0004723, 0008596, 0008420, 0004724, 0000163, 0008598, 0017018, 0017019, 0000158, 0008600,  
0030357, 0030358, 0015071, 0030360, 0030361, 0009400, 0004725, 0004726, 0004727, 0030946,  
0030945, 0004728, 0005001, 0019198, 0008138, 0008579, 0017017, 0008330, 0004647, 0017120,  
0019173, 0050278, 0050286, 0042392, 0050301, 0050307, 0050308, 0050309, 0050340, 0047385,  
0050406, 0050407, 0047384, 0050196, 0004741, 0019906, 0050408, 0047862, 0019211, 0019888,  
0008160, 0042030, 0004858, 0019212, 0004864, 0004865, 0001691, 0019208, 0008597, 0017020,  
0008599, 0008601, 0030359, 0030362, 0019909, 0004442, 0004443, 0004444, 0016313, 0017021,  
0004440, 0005081, 0005082, 0045206, 0045207, 0019910, 0045253, 0045249, 0005963, 0008287,  
0005955, 0017023, 0030289, 0000164, 0000159

図 3 9

細胞周期に関係している遺伝子と遺伝子オントロジーにおける  
GO\_IDとの関係

0030996, 0007050, 0000074, 0007049, 0007113, 0051330, 0000080, 0000114, 0007089, 0000081,  
0051331, 0000085, 0000116, 0051328, 0051332, 0051329, 0000082, 0000083, 0000079, 0045786,  
0045787, 0000086, 0000117, 0000216, 0000084, 0000115, 0051327, 0000087, 0000075, 0051321,  
0000278, 0045448, 0035185, 0007347, 0046001, 0045976, 0046002, 0045977, 0009794, 0007346,  
0045930, 0046003, 0007348, 0045931, 0046004, 0035186, 0045749, 0007090, 0045750, 0000751,  
0030571, 0000077, 0006977, 0000320, 0000321, 0019055, 0046792, 0046615, 0003750

図 4 0

レセプターをコードしている遺伝子と遺伝子オントロジーにおける GO\_ID との関係

0007176, 0007175, 0007177, 0045741, 0045877, 0045878, 0043109, 0007226, 0015464, 0030594,  
0004888, 0016907, 0008227, 0004981, 0001873, 0008329, 0001874, 0004978, 0004977, 0008188,  
0042654, 0004930, 0004980, 0004952, 0001588, 0001590, 0001589, 0001591, 0001670, 0001592,  
0001593, 0001607, 0008528, 0004979, 0004946, 0004951, 0015054, 0035237, 0004966, 0042263,  
0004983, 0001602, 0001601, 0016492, 0035236, 0004994, 0004995, 0016498, 0016497, 0016496,  
0004872, 0008503, 0001646, 0001644, 0016502, 0001877, 0001875, 0016019, 0001653, 0016941,  
0001584, 0001605, 0008261, 0004942, 0004943, 0004944, 0001595, 0001596, 0004945, 0004947,  
0001598, 0004962, 0001599, 0001600, 0001637, 0004950, 0016493, 0016494, 0004918, 0004907,  
0016495, 0001606, 0035013, 0004982, 0004985, 0004986, 0004987, 0004988, 0015051, 0016499,  
0001648, 0015057, 0001604, 0001603, 0004990, 0005000, 0045015, 0005046, 0005051, 0005052,  
0005053, 00050839, 0001857, 0004875, 0001847, 0004877, 0001861, 0004878, 0001858, 0004876,  
0001860, 0001859, 0004904, 0004896, 0004905, 0004906, 0004908, 0004909, 0004910, 0004920,  
0004921, 0016517, 0016515, 0016518, 0042010, 0042012, 0030368, 0042008, 0042014, 0004911,  
0042016, 0001532, 0042018, 0042020, 0045506, 0045507, 0045508, 0045509, 0004912, 0004913,  
0004914, 0004915, 0004917, 0004919, 0005031, 0005032, 0005033, 0005035, 0005030, 0019766,  
0019763, 0019767, 0019768, 0019769, 0019770, 0019771, 0019772, 0001793, 0001792, 0008262,  
0005041, 0008032, 0030228, 0001863, 0008029, 0008030, 0001565, 0005024, 0017002, 0016361,  
0005025, 0016362, 0005026, 0009885, 0009884, 0008288, 0005003, 0005004, 0005005, 0005006,  
0005023, 0008313, 0005007, 0005008, 0005009, 0005010, 0005011, 0005017, 0005018, 0005019,  
0005020, 0005021, 0042096, 0004892, 0005029, 0005028, 0008529, 0005045, 0008530, 0004928,  
0004929, 0042099, 0019764, 0015029, 0019765, 0008019, 0005012, 0005013, 0005014, 0005015,  
0005016, 0005027, 0004927, 0004894, 00050785, 0016964, 0030226, 0030227, 0004874, 0015026,  
0008036, 0030373, 0008095, 0042071, 0004879, 0004880, 0003708, 0004886, 0003707, 0004882,  
0004884, 0030284, 0004883, 0017082, 0004887, 0008434, 0001566, 0009881, 0009882, 0008020,  
0004975, 0009883, 0004873, 0008046, 0005042, 0005043, 0001647, 0005040, 0045125, 0001619,  
0016526, 0001620, 0001625, 0001629, 0001628, 0001630, 0001623, 0001624, 0001622, 0001638,  
0001633, 0001645, 0001643, 0008067, 0008066, 0001640, 0001641, 0001642, 0004965, 0016917,  
0001639, 0016503, 0004932, 0004933, 0004934, 0004936, 0004937, 0004938, 0004939, 0004940,  
0004941, 0015052, 0004969, 0004989, 0004993, 0001585, 0001586, 0001587, 0016609, 0001594,  
0008226, 0004949, 0004953, 0004954, 0004955, 0016501, 0004959, 0004956, 0004957, 0004958,  
0001785, 0004960, 0004961, 0001627, 0004974, 0001631, 0001632, 0008502, 0001626, 0001608,  
0045028, 0001614, 0001609, 0008501, 0001610, 0001611, 0001612, 0001613, 0045032, 0045031,  
0015065, 0045029, 0045030, 0004984, 0004992, 0001621, 0016500, 0004963, 0004968, 0004964,  
0004976, 0030273, 0004996, 0008527, 0001616, 0001617, 0004997, 0001635, 0004948, 0001636,  
0015056, 0016519, 0015058, 0016523, 0004967, 0016520, 0004991, 0001634, 0016522, 0015055,  
0004999, 0004890, 0004970, 0004971, 0015277, 0004972, 0004897, 0004900, 0004901, 0030525,  
0016167, 0004902, 0030524, 0004903, 0004923, 0004924, 0004925, 0030369, 0005055, 0016524,  
0030229, 0030106, 0030108, 0030107, 0030109, 0030110, 0045012, 0045233, 0030379, 0004926,  
0008158, 0042813, 0001571, 0005049, 0030376, 0005044, 0017154, 0008281, 0005056, 0004998,  
0030377, 0016931, 0019041, 0001618, 0008196, 0005484

図 4 1

イオンチャンネルをコードしている遺伝子と遺伝子オントロジー  
における GO\_ID との関係

0045161, 0045163, 0045162, 0005254, 0005216, 0005253, 0005224, 0005217, 0008068, 0005234,  
0016934, 0016933, 0004891, 0005237, 0019182, 0005229, 0005247, 0005244, 0015274, 0015257,  
0015482, 0008308, 0005225, 0005261, 0015251, 0004931, 0005231, 0005227, 0015276, 0005262,  
0015278, 0005220, 0005218, 0005219, 0015279, 0015275, 0008381, 0005245, 0010173, 0015270,  
0008331, 0008086, 0008332, 0015252, 0005221, 0005222, 0005223, 0004889, 0016904, 0015281,  
0015249, 0005267, 0015269, 0016286, 0005228, 0005249, 0005251, 0005242, 0015272, 0015467,  
0015273, 0005252, 0015271, 0005250, 0005232, 0005272, 0015280, 0005248, 0005230, 0030171,  
0015282, 0008282, 0019183, 0005891, 0008087, 0008076, 0001518, 0017071, 0016935

図 4 2

シグナル伝達系に関与している遺伝子と遺伝子オントロジーにおける  
GO\_IDとの関係

0007165, 0007166, 0009966, 0009968, 0009967, 0000750, 0007330, 0030454, 0000757, 0007234,  
0007227, 0000160, 0007263, 0007264, 0016601, 0035020, 0051056, 0035021, 0051058, 0035022,  
0051057, 0031291, 0007265, 0046578, 0046580, 0046579, 0035024, 0035023, 0035025, 0007266,  
0001402, 0000077, 0042770, 0006977, 0030330, 0006976, 0008630, 0042771, 0006978, 0042772,  
0008269, 0050851, 0050853, 0050859, 0050861, 0050854, 0050858, 0050860, 0050857, 0050862,  
0050856, 0050852, 0019221, 0007167, 0007168, 0007178, 0030509, 0030510, 0030514, 0030513,  
0007179, 0008101, 0007169, 0048013, 0007173, 0008314, 0042058, 0042059, 0045742, 0008543,  
0040036, 0040037, 0045743, 0048012, 0008286, 0046626, 0046627, 0046628, 0048009, 0048011,  
0048008, 0045501, 0045873, 0045874, 0048014, 0008293, 0048010, 0030947, 0030948, 0030949,  
0007185, 0007186, 0007212, 0042699, 0007214, 0007216, 0007218, 0007211, 0008277, 0045744,  
0045745, 0007210, 0007217, 0007215, 0035235, 0007229, 0007219, 0030179, 0008593, 0045746,  
0045747, 0007231, 0007232, 0008589, 0045879, 0045880, 0008063, 0008592, 0045751, 0045752,  
0016055, 0007222, 0008590, 0045810, 0045811, 0008591, 0045812, 0045813, 0030111, 0030178,  
0030177, 0009785, 0010019, 0009870, 0010204, 0006984, 0009873, 0010104, 0010105, 0030522,  
0048384, 0048385, 0048387, 0048386, 0030518, 0030521, 0035076, 0030520, 0042921, 0050847,  
0009867, 0009864, 0010017, 0010018, 0010161, 0009863, 0009862, 0031098, 0042700

図 4 3 - 1

キナーゼおよびキナーゼ活性に関与している遺伝子と  
遺伝子オントロジーにおける GO\_ID との関係

0007178, 0007169, 0007171, 0007205, 0001789, 0042313, 0007233, 0045860, 0009747, 0009748, 0006987, 0007243, 0007249, 0007250, 0043122, 0043124, 0043123, 0000187, 0007257, 0000186, 0007255, 0007256, 0000185, 0042655, 0007254, 0031098, 0000079, 0045859, 0045736, 0006469, 0045737, 0009764, 0045204, 0006130, 0007251, 0007170, 0006224, 0043127, 0043126, 0043128, 0019900, 0019901, 0008432, 0051019, 0048273, 0042808, 0051018, 0005080, 0030971, 0005115, 0008579, 0017017, 0050408, 0004611, 0004612, 0030585, 0004613, 0003848, 0016301, 0008728, 0019205, 0050148, 0004749, 0019200, 0004788, 0047506, 0047507, 0050515, 0008698, 0047590, 0047336, 0047601, 0008776, 0003991, 0047620, 0004020, 0047628, 0047633, 0047649, 0047650, 0019202, 0004054, 0018110, 0035173, 0004072, 0004349, 0004413, 0047666, 0047667, 0047700, 0047758, 0047761, 0047764, 0008804, 0008671, 0008673, 0008787, 0019150, 0008865, 0004335, 0004340, 0004396, 0004454, 0009702, 0008737, 0045127, 0009384, 0008443, 0008662, 0003873, 0003872, 0008993, 0004747, 0008741, 0004856, 0008744, 0004103, 0008819, 0004111, 0047814, 0017050, 0047841, 0004140, 0047848, 0004143, 0047333, 0008842, 0004168, 0047878, 0004305, 0047887, 0047900, 0030387, 0050201, 0047912, 0046316, 0047931, 0047940, 0047944, 0008887, 0004370, 0004371, 0047973, 0047976, 0009927, 0004417, 0047992, 0008902, 0008904, 0047715, 0008906, 0004428, 0004430, 0001727, 0019140, 0035299, 0035300, 0050517, 0050516, 0047325, 0047326, 0008440, 0016307, 0000285, 0016308, 0045215, 0016309, 0035005, 0035004, 0016303, 0046934, 0008910, 0001729, 0008481, 0001728, 0050059, 0050073, 0019158, 0004496, 0003951, 0042736, 0019206, 0004001, 0019136, 0004136, 0004137, 0004138, 0004797, 0000816, 0004849, 0004550, 0046899, 0019201, 0004017, 0004127, 0004385, 0004798, 0009041, 0050145, 0050154, 0050165, 0004594, 0018720, 0050190, 0050191, 0004618, 0008972, 0004631, 0050195, 0008974, 0046404, 0008976, 0008980, 0050222, 0004672, 0047696, 0019912, 0019913, 0030295, 0035174, 0004674, 0035175, 0035184, 0050063, 0004676, 0004679, 0009931, 0004683, 0004685, 0004684, 0004686, 0004688, 0016905, 0004687, 0004689, 0008606, 0004680, 0004681, 0004682, 0008604, 0004690, 0004691, 0008602, 0004692, 0004693, 0016537, 0004677, 0004694, 0004703, 0004678, 0004695, 0004696, 0008384, 0004697, 0004700, 0004698, 0004699, 0004701, 0004702, 0004707, 0008338, 0016908, 0016909, 0004705, 0008339, 0004709, 0004706, 0004710, 0008349, 0042656, 0004704, 0042801, 0004675, 0019199, 0004711, 0008353, 0004712, 0004708, 0008545, 0004673, 0008896, 0008256, 0008257, 0009784, 0009885, 0004713, 0004715, 0004716, 0004718, 0004714, 0050254, 0050321, 0050359, 0050225, 0008478, 0004743, 0008986, 0008531, 0050262, 0046522, 0050276, 0050277, 0004756, 0004765, 0050299, 0050300, 0050316, 0050317, 0009024, 0050324, 0009029, 0019165, 0050331, 0009030, 0050354, 0009038, 0050394, 0050400, 0047323, 0050405, 0047322, 0008772, 0004740, 0050369, 0050521, 0050242, 0016536, 0019209, 0019207, 0019887, 0016534, 0016535, 0042557, 0042556, 0030296, 0030298, 0030297, 0019210, 0004860, 0008427, 0004862, 0004861, 0008426, 0004863, 0030291, 0030292, 0030294, 0030293, 0035014, 0046935,

図 4 3 - 2

キナーゼおよびキナーゼ活性に関与している遺伝子  
と遺伝子オントロジーにおける GO\_ID との関係

0008603, 0019914, 0016538, 0003751, 0003752, 0003753, 0008607, 0008605, 0004429, 0004431,  
0004432, 0004433, 0008438, 0004717, 0005077, 0004384, 0017135, 0016304, 0016305, 0016306,  
0015072, 0015073, 0005079, 0016910, 0016911, 0016912, 0017027, 0001566, 0001571, 0030377,  
0005078, 0005076, 0008268, 0005071, 0005066, 0005068, 0005069, 0000307, 0000308, 0019908,  
0005945, 0008385, 0005942, 0035030, 0035031, 0035032, 0016533, 0019907, 0005956, 0005943,  
0005944, 0005954, 0005952, 0005958, 0005959, 0005964, 0009358, 0009365

図 4 4

転写制御に関与している遺伝子と遺伝子オントロジーにおける  
GO\_IDとの関係

0045990, 0006355, 0045013, 0045892, 0045014, 0046015, 0045991, 0045893, 0046016, 0007221,  
0051091, 0007228, 0006994, 0035104, 0051092, 0030969, 0006990, 0043193, 0045944, 0042994,  
0000114, 0006357, 0000116, 0000083, 0000117, 0000115, 0051037, 0051038, 0051039, 0007072,  
0007073, 0007074, 0007075, 0045896, 0007068, 0007069, 0016479, 0046017, 0007070, 0000122,  
0046021, 0007071, 0016480, 0046023, 0045897, 0046018, 0045943, 0046022, 0046024, 0045945,  
0006356, 0006359, 0006342, 0016440, 0048096, 0000716, 0006283, 0016441, 0035194, 0016481,  
0045449, 0045996, 0009373, 0046020, 0046019, 0045816, 0006358, 0017055, 0045898, 0045894,  
0007532, 0045941, 0007357, 0007360, 0007363, 0009371, 0007329, 0045817, 0045899, 0045895,  
0050434, 0046782, 0051090, 0051123, 0009300, 0006351, 0016552, 0016551, 0006350, 0009299,  
0042789, 0006366, 0019083, 0019084, 0019085, 0019086, 0006362, 0006368, 0006385, 0009303,  
0042791, 0006383, 0042792, 0006390, 0042794, 0042793, 0042790, 0006360, 0009302, 0009301,  
0042795, 0042796, 0006393, 0006353, 0006391, 0006352, 0006361, 0006363, 0019223, 0006367,  
0006369, 0019224, 0030846, 0030847, 0006384, 0006386, 0019225, 0042797, 0009304, 0006410,  
0016245, 0042992, 0042990, 0042993, 0042991, 0006340, 0045891, 0045889, 0006339, 0045888,  
0045890, 0006988, 0006989, 0019056, 0006978, 0042772, 0003700, 0000130, 0030528, 0003705,  
0003702, 0008134, 0003712, 0003713, 0030374, 0003714, 0003719, 0017163, 0003701, 0016251,  
0003703, 0016455, 0016252, 0003704, 0003706, 0003709, 0030401, 0016986, 0016988, 0003715,  
0003716, 0003717, 0003718, 0016563, 0003710, 0042156, 0003711, 0008148, 0008159, 0016943,  
0016944, 0016945, 0016564, 0016565, 0016566, 0000120, 0005667, 0005672, 0005669, 0005673,  
0005674, 0005675, 0035101, 0008023, 0008024, 0005671, 0030907, 0000126, 0000127, 0017053,  
0000346, 0019036, 0005670



図 4 5

GPCRおよびGPCRに関与している遺伝子と遺伝子オントロジー  
におけるGO\_IDとの関係

0007186, 0007189, 0007193, 0007187, 0007188, 0007190, 0007199, 0007200, 0030265, 0001789,  
0008277, 0045744, 0045745, 0035104, 0006992, 0035103, 0006993, 0035105, 0007201, 0045761,  
0016907, 0004930, 0008528, 0016492, 0001646, 0001644, 0001637, 0001664, 0004703, 0004678,  
0005065, 0003927, 0000263, 0000264, 0000265, 0008020, 0004975, 0001647, 0016526, 0001629,  
0008067, 0004933, 0001584, 0016609, 0001627, 0001608, 0045028, 0001609, 0008501, 0001610,  
0001611, 0001612, 0001613, 0001633, 0030379, 0004926, 0016299, 0015467, 0015273, 0005834

図 46

整理番号	遺伝子名	refseq NO.	標的位置	標的配列	配列番号(ヒト)	配列番号(マウス)	生物学的機能カテゴリー	文献に基づく生物学的機能	関連疾患名
1	A2M	NM_000014.3	4299	ttgataagggtgtcaaatcagaca	127274	663769	-	receptor	Alzheimer disease(アルツハイマー病)
2	ADSL	NM_000026.1	165	ttgcctatcacagatgaacaat	234456	618797	-	adenylosuccinate lyase	autism(自閉症)
3	ADSL	NM_000026.1	422	tcggcttgccgacttgcctaagg	234462	618803	see also 2 line	-	-
4	ALAS2	NM_000032.1	1168	tggggagcgtgatggaattatgc	216068	603406	-	general RNA polymerase II transcription factor	sideroblastic anemia(鉄芽球性貧血)
5	ABCD1	NM_000033.2	1644	cacgagatgttcacagatttga	70788	492568	-	peroxisomal membrane transporter	adrenoleukodystrophy(副腎脳白質ジストロフィー)
6	ANK1	NM_000037.2	4951	gacgacacagctggattcagatgc	286543	682368	signal transduction	-	spherocytosis(遺伝性球形赤血球症)
7	APC	NM_000038.2	44	tgcagcttcataatgcagttgt	127993	530214	signal transduction, cell cycle	beta-catenin binding	thyroid cancer(甲状腺癌), colorectal cancer(大腸癌), hepatoblastoma(肝芽腫), adenomatous polyposis of the colon(腺腫性ポリプ), cerebral astrocytoma(大脳星状細胞腫), colorectal cancers(結腸直腸癌), adrenocortical cancer(副腎皮質癌), hepatocellular cancer(肝臓癌), squamous cell cancer(扁平上皮癌), familial nervous system tumor syndromes(家族性神経系腫瘍症候群), familial adenomatous polyposis(家族性大腸腺腫症), gastric cancer(胃癌)
8	APC	NM_000038.2	128	ttccaatcatcttcaaaactgg	127997	530216	see also 7 line	-	-
9	APC	NM_000038.2	993	ttgtcaatccttggtactcatga	128014	530240	see also 7 line	-	-
10	APC	NM_000038.2	1187	cagtcagcagcactccacacatca	128018	530245	see also 7 line	-	-
11	APC	NM_000038.2	1898	tactaccggagccagacaaaca	128044	530257	see also 7 line	-	-
12	APC	NM_000038.2	1960	atgtgtccagcttgatagctaca	128048	530261	see also 7 line	-	-
13	APC	NM_000038.2	2847	ttcactaagtcggaaattcaaa	128069	530283	see also 7 line	-	-
14	APC	NM_000038.2	4969	ttgaaggagacacctataaacttt	128148	530338	see also 7 line	-	-
15	APC	NM_000038.2	7025	ttcccttgtagaagaatgaataa	128197	530399	see also 7 line	-	-
16	AR	NM_000044.2	3598	ttgatgaacttcgaatgaactac	907	441709	receptor activity, transcription, regulat or,	steroid binding	androgen insensitivity syndrome(アンドロゲン抵抗性症候群), breast cancer(乳癌), androgen insensitivity(アンドロゲン不感症候群), prostate cancer(前立腺癌), spinal and bulbar muscular atrophy(脊髄延髄性筋萎縮症)
17	ASPA	NM_000049.1	890	tcctaactctgcaggatcaagact	203366	712815	signal transduction	aspartoacylase	Canavan disease(カナバン病)
18	ATM	NM_000051.2	1660	accttctgtgtataagtctga	21913	455385	transcription, regulat or, kinase related,	-	breast cancer(乳癌), non-hodgkin lymphoma(非ホジキンリンパ腫), ataxia telangiectasia(毛細血管拡張性運動失調症), leukemia(白血病), lymphoma(リンパ腫)
19	ATM	NM_000051.2	7802	atgaagtcctcaataatctatc	22090	455578	signal transduction, cell cycle	-	-
20	ATM	NM_000051.2	9184	gaccagaggtttcaacaagtagc	22121	455632	see also 18 line	-	-

図46(続七)

2

[illegible]

図46 (続き)

3

45	CBS	NM_000071.1	439	caccctatggtcagaatcaaca	233577	618008	-	cystathione beta-synthase	atherosclerosis(粥状硬化症)、homocystinuria(ホモシスチン原症)
46	CBS	NM_000071.1	441	ccctatggtcagaatcaacaag	233578	618009	see also 45 line		
47	CBS	NM_000071.1	442	ccctatggtcagaatcaacaaga	233579	618010	see also 45 line		
48	CD36	NM_000072.1	327	ttggatctttgatgtgcaaaatc	247777	634387	receptor_activity	receptor	atherosclerosis(粥状硬化症)、platelet glycoprotein IV deficiency(血小板糖タンパク質)
49	CHRE	NM_000080.2	953	cgcaacgctcattgtcatgaatt	179197	572412	channel, receptor_activity, signal_transduction	nicotinic acetylcholine-activated cation-selective channel	
50	CHRE	NM_000080.2	954	gccacgctcattgtcatgaattg	179198	572413	see also 49 line		
51	CHS1	NM_000081.1	6245	ttcaacctctactactactaac	268177	651748	signal_transduction	protein transporter	(Chediak-Higashi syndrome(チャエディアック・東症候群))
52	CHS1	NM_000081.1	7098	atgctgtgattatgaactcc	268207	651774	see also 51 line		
53	CHS1	NM_000081.1	7327	gccaacgctgtgtctctcatcg	268213	651783	see also 51 line		
54	CHS1	NM_000081.1	9250	atcagtggtgcaccatctataga	268288	651830	see also 51 line		
55	CLCN1	NM_000083.1	1305	cccaccaggaatgggtcaattca	263225	646852	channel	voltage-gated chloride channel	Bocker's disease(ベッカー病)、Thomsen's disease(トムゼン病)
56	CLCN5	NM_000084.1	320	gtgtaggagcactatgatgttc	263357	646992	channel	voltage-gated chloride channel	Fanconi syndrome(ファンコニ症候群)、nephrolithiasis(腎結石症)
57	CLCN5	NM_000084.1	324	aggagcctatgatgtttcaata	263359	646993	see also 56 line		
58	CLCN5	NM_000084.1	386	ggcacagagagattaccataaaa	263363	646995	see also 56 line		
59	CLCN5	NM_000084.1	417	gtcaacatggccttaattcaca	263365	646999	see also 56 line		
60	CLCN5	NM_000084.1	966	gtgccactgcttcaacaaataca	263379	647013	see also 56 line		
61	CLCN5	NM_000084.1	1831	gtgactcagatgactgtttctct	263398	647036	see also 56 line		
62	CLCN5	NM_000084.1	1833	gactcagatgactgtttctctg	263399	647037	see also 56 line		
63	CLCN5	NM_000084.1	1981	ctcaatggatcccccttcttga	263404	647040	see also 56 line		
64	CLCN5	NM_000084.1	2081	tccttactcaggacagatgatgact	263406	647041	see also 56 line		
65	CLCN5	NM_000084.1	2460	taccacaaaggatgtgttaagc	263410	647051	see also 56 line		
66	CNGA1	NM_000087.1	813	agggtggaactatccagaaatta	111100	520711	channel	potassium channel	retinitis pigmentosa(色素性網膜炎)
67	COL1A2	NM_000089.2	3521	cagaccacaaaggactatgaattg	288067	659376	-	translation regulator	lipoblastoma(脂肪芽細胞腫)、Ehlers-Danlos syndrome(エーラー・ダンロス症候群)、osteogenesis imperfecta(骨形成不全症)
68	COL5A1	NM_000093.2	913	caactgtactctcactgtataaa	177479	659682	-	heparin binding	Ehlers-Danlos syndrome(エーラー・ダンロス症候群)、breast cancer(乳癌)、gynecomastia(女性化乳房)、head and neck squamous cell carcinoma(頭頸部扁平上皮細胞癌)
69	CYP19A1	NM_000103.2	811	tggcaagctctctcatcaaac	221666	608596	-	-	cardiomyopathy(アロコール性心筋症)、muscular dystrophy(筋ジストロフィ)
70	DMD	NM_000109.2	1192	cccttaagcctcgtattcaagagc	116679	521655	-	-	
71	DMD	NM_000109.2	1590	atgaatctcttaataatcaagatg	116688	521669	see also 70 line		
72	DMD	NM_000109.2	4112	ttggcatgttgcatcagatttat	116748	521728	see also 70 line		
73	DMD	NM_000109.2	4114	ggscatgttgcatcagatttatg	116749	521730	see also 70 line		
74	DMD	NM_000109.2	4364	ttctgttgtaggagaaactacatg	116757	521739	see also 70 line		
75	DMD	NM_000109.2	5154	gcctggggaaggctactcaaaa	116780	521773	see also 70 line		

図 46 (續前)

[illegible]

図46 (続き)

105	EXT1	NM_000127.1	1792	caggcttgggtccttcagattcc	213308	601665	see also 100 line			
106	EXT1	NM_000127.1	1951	caggcttatcatcaggataaaa	213315	601674	see also 100 line			
107	EXT1	NM_000127.1	2000	ttcttgggagagctatttttc	213319	601676	see also 100 line			
108	EXT1	NM_000127.1	2033	aagattgtattacactacactaga	213322	601677	see also 100 line			
109	EXT1	NM_000127.1	2078	aagcacatatacagtaacagttt	213324	601679	see also 100 line			
110	EXT1	NM_000127.1	2079	agcacatatacagtaacagttta	213325	601680	see also 100 line			
111	EXT1	NM_000127.1	2081	cacatatcagtaacagttta	213326	601681	see also 100 line			
112	EXT1	NM_000127.1	2166	ttcttactactatgtaattta	213329	601689	see also 100 line			
113	EXT1	NM_000127.1	2171	tactactactaatttaggttt	213330	601691	see also 100 line			
114	EXT1	NM_000127.1	2174	tactatgtaatttaggtttaaa	213331	601692	see also 100 line			
								protein-glutamine gamma-		
115	F13A1	NM_000129.2	564	gtggggaaattccgcattgtgt	143366	736130	-	glutamytransferas	-	
116	F5	NM_000130.2	1056	tgcagccttacattgacattaaa	162592	560209	-	copper binding	-	thrombophlebitis(血栓性静脈炎)、 parahemophilia(パライ血友病)
117	F8	NM_000132.2	1036	ttctcgaaggtcacacatttct	162745	560360	-	-	-	-
118	F8	NM_000132.2	1806	tcggtgcctgaccgccttattct	162770	560402	see also 117 line			
119	F8	NM_000132.2	2073	cagcatcaattggctatgttttg	162776	560408	see also 117 line			
										aplastic anemia(再生不良性貧血)、Fanconi anemia(ファンconi貧血)、Fanconi pancytopenia(ファンconi汎血球減少)
120	FANCA	NM_000135.1	1617	gaacttaagagagattgtcatca	301347	706954	-	-	-	aplastic anemia(再生不良性貧血)、Fanconi anemia(ファンconi貧血)、Fanconi pancytopenia(ファンconi汎血球減少)
121	FANCC	NM_000136.1	1826	ttcttgaccagacottgtacaga	301422	669813	-	extracellular matrix structural constituent	-	Marfan syndrome(マルファン症候群)
122	FBN1	NM_000138.2	1176	agctgccagtcacataaccaaa	144242	548411	-	-	-	
123	FBN1	NM_000138.2	1499	gtccgctatctctgtcaaaatgg	144256	548419	see also 122 line			
124	FBN1	NM_000138.2	6681	atgtattggagggttttgaatgc	144381	548501	see also 122 line			
125	FBN1	NM_000138.2	7485	ctcccaaacctgcaattttatc	144394	548519	see also 122 line			
126	FECH	NM_000140.1	785	gagaagcagagtggtgctatttgt	164259	618850	-	Smad3/Sp-1 heterodimer	-	protoporphyrin erythropoietic(骨髄性プロトポル フィリア)
										acrocephalosyndactyl(ワールデンブルグ症候 群)、Apert syndrome(アペール症候群)、Beare- Stevenson cutis gyrata syndrome(-), bladder cancer(膀胱癌)、craniofacial dysostosis(頭蓋顔 面異骨症)、Jackson-Weiss syndrome(Jackson- Weiss症候群)、Pfeiffer syndrome(プファイアー fumarase deficiency(フマル酸水添加酵素欠損 症)、herefay multiple leiomyoma(遺伝性多発性 血管筋腫)、renal cell cancer(腎細胞癌)、 fumaricaciduria(フマル酸尿症)
127	FGFR2	NM_000141.2	1571	ctctatttcggaatgaacttt	82241	502302	receptor activity, kinase related	-	-	
128	FH	NM_000143.2	157	ctcgaatgcaagcacaatttc	233545	617971	cell cycle			
129	FH	NM_000143.2	251	gagatcagatgaactttaaga	233554	617978	see also 128 line			
130	FH	NM_000143.2	254	atctacatgaactttaagattg	233555	617979	see also 128 line			

図46 (続き)

131	FH	NM_000143.2	406	atgagtagctgaaggtaaatia	233560	617983	see also 128 line		guanidinoacetate N-methyltransferase deficiency(酢酸グアニンメチルトランスフェラーゼ欠損症)
132	GAMT	NM_000156.4	447	ctgcctgacggctcaacttctgagg	214060	604097	-	-	-
133	GBE1	NM_000158.1	738	atgcaatgtactaccagaatca	202019	592961	-	transferase, transferring glycosyl groups	adult polyglucosan body disease(-), Andersen disease(アンダーソン病)
134	GBE1	NM_000158.1	1877	cacagcctacgtgagtgaaaaa	202062	593009	see also 133 line	-	-
135	GBE1	NM_000158.1	1879	caggcctacgtgagtgaaaaa	202063	593010	see also 133 line	-	-
136	GJB1	NM_000166.2	515	cactgtgtggacctaagtcac	263784	647383	-	connexon channel	Charcot-Marie-Tooth peroneal muscular atrophy(シャルコー・マリー・ツース病)、deafness(聾), Charcot-Marie-Tooth neuropathy(シャルコー・マリー・ツース神経障害)
137	GJB1	NM_000166.2	837	ccgcctctacctaagtcacagc	263786	647388	see also 136 line	-	-
138	GLI3	NM_000168.2	1648	atgttgtagtgcataatgagaag	4481	459713	transcription_regulat or, signal transduction	-	Greig cranio-polydactyly syndrome(グレーグ症候群), Pallister-Hall syndrome(パリスター・ホール症候群), postaxial polydactyly(軸後指過)
139	GLI3	NM_000168.2	2208	cccatcagcaactattccaaca	4488	459719	see also 138 line	-	-
140	GLI3	NM_000168.2	2357	accggcaggaccacaaatgag	4492	459721	see also 138 line	-	-
141	GLA	NM_000169.1	445	ctgaagctaggagattatgcaga	201967	593256	-	alpha-galactosidase	angiokeratoma(絨角血管腫), Fabry dystopic lipidosis(ファブリー病), lipidosis(リビドーシス)
142	GLDC	NM_000170.1	394	ttggagctggcagcattgatga	225945	502985	-	glycine dehydrogenase (decarboxylating)	-
143	GLDC	NM_000170.1	848	tccagactggagccaaataact	225956	502994	see also 142 line	-	-
144	NR3C1	NM_000176.1	776	cagaccctgtgatagatgaaac	8493	447229	transcription_regulat or, receptor activity, zinc binding	-	cortisol resistance from glucocorticoid receptor defect(コルチゾール抵抗性)
145	NR3C1	NM_000176.1	990	ctgcacccctggggaataaagc	8501	447234	see also 144 line	-	-
146	NR3C1	NM_000176.1	1550	gccagcagtcgcgctatcgaaa	8512	447245	see also 144 line	-	-
147	NR3C1	NM_000176.1	1551	cccagcagtcgcgctatcgaaa	8513	447246	see also 144 line	-	-
148	NR3C1	NM_000176.1	1553	cagcagtcgcgctatcgaaaatg	8514	447247	see also 144 line	-	-
149	NR3C1	NM_000176.1	1557	atgcgcgctatcgaaaatgtcttc	8515	447248	see also 144 line	-	-
150	NR3C1	NM_000176.1	2265	ctggcagcgggtttatcaactga	8530	447264	see also 144 line	-	-
151	GSN	NM_000177.3	1454	tgaggcagcagctacatcatc	113915	523090	-	structural constituent of cytoskeleton	bladder transitional cell carcinoma(膀胱移行上皮癌), amyloidosis(アミロイドーシス)
152	GSN	NM_000177.3	1459	gcgacagctacatcatcttctgac	113916	523092	see also 151 line	-	-
153	MSH6	NM_000179.1	3691	atgatgcaacagcacattctct	16801	451734	-	damaged DNA binding	colorectal carcinoma(大腸癌), colorectal cancer(大腸癌), ataxia telangiectasia(毛細血管拡張性運動失調症), endometrial cancer(子宮癌), colorectal cancers(結腸直腸癌), gastric
154	MSH6	NM_000179.1	3686	atggcatgcatgtgaaatga	16807	451742	see also 153 line	-	-

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155	HADHA	NM_000182.3	129	tgctgaccagagaccatattatc	215297	614219	-	short-chain enoyl-CoA hydratase	long chain 3-hydroxyacyl-CoA dehydrogenase (LCHAD) deficiency(3-ヒドロキシシロ CoA 長鎖デヒドロゲナーゼ欠損症)、trifunctional protein deficiency(三官能性タンパク質欠損症)
156	HADHA	NM_000182.3	192	ctcccaattcaagtaataca	215301	614223	see also 155 line	-	-
157	HK1	NM_000188.1	1837	ttggactacatgggacaaagg	84948	503636	kinase related	-	hemolytic anemia(溶血性貧血)
158	HMGCL	NM_000191.1	283	aagcttgaaggcattcagaag	234030	618393	-	hydroxymethylglutaryl-CoA lyase	hydroxymethylglutaricaciduria(ヒドロキシメチルグルタル酸尿症)、3-hydroxy-3-methylglutaryl CoA lyase deficiency(3-ヒドロキシ-3-メチルグルタル CoA リアアゼ欠損症)
159	SGSH	NM_000199.2	457	gggcggacatcactagaattaa	200618	592336	-	sulfuric ester hydrolase	mucopolysaccharidosis(ムコ多糖体症)、Sanfilippo syndrome(サンフィリッポ症候群)
160	IDS	NM_000202.2	1155	acgtcaagccttaaacatcagt	200480	592153	-	-	Hunter syndrome(ハンター症候群)、mucopolysaccharidosis(ムコ多糖体症)
161	ITGB3	NM_000212.1	426	ctgtgacatctactactgatg	249368	636022	receptor activity, signal transduction	cell adhesion receptor	alloimmune thrombocytopenia(同種免疫性血小板減少症)
162	JAG1	NM_000214.1	1660	gtgagcccaaaccttgtaaac	147049	549033	signal transduction	-	arteriohepatic dysplasia(肝臓動脈形成不全症)、cholestasis with peripheral pulmonary stenosis(胆汁うっ滞、syndromatic hepatic ductular hypoplasia(肝臓形成不全症))
163	JAG1	NM_000214.1	1976	ctgtcagctggacatcgattatt	147066	549042	see also 162 line	-	-
164	JAG1	NM_000214.1	3267	tcctataccaggataactgtgc	147087	549072	see also 162 line	-	-
165	KCNJ1	NM_000220.2	515	ctgccattttctgcttatcttt	86386	504836	channel	-	Barter syndrome(バーター症候群)、hyperprostaglandin syndrome(高プロスタグランジン血症)
166	KIT	NM_000222.1	886	atgtgtatgcccaataactctt	87921	506182	receptor activity, kinase related, signal transduction	Smad3/Sp-1 heterodimer	soft tissue sarcoma(軟部組織肉腫)、leukemia(白血病)、germ cell tumors(胚細胞腫瘍)、piebaldism(まだら症)、testicular cancer(睾丸癌)、astrocytic tumors(星状腫瘍)、familial/sporadic gastrointestinal stromal tumors(家族性/散発性胃腸間質腫瘍)
167	KIT	NM_000222.1	1324	gagcccaaatagattgtattt	87935	506204	see also 166 line	-	-
168	KIT	NM_000222.1	2009	gagggcccaaccctggctattaca	87954	506225	see also 166 line	-	-
169	KIT	NM_000222.1	2011	gggcccacccctgtgtcattacaga	87955	506226	see also 166 line	-	-
170	LAMB3	NM_000228.1	646	gtccaaacttaaccttatgattt	291317	649402	-	structural molecule	epidermolysis bullosa(表皮水疱症)
171	SGCB	NM_000232.2	726	gggcaaaaaccattgaatttcaaca	320157	687430	-	-	limb girdle muscular dystrophy(肢帯型筋ジストロフィー)
172	LIG1	NM_000234.1	1926	cagccgcatccccaagattaaac	30532	506493	-	DNA ligase (ATP)	-
173	LIG1	NM_000234.1	1927	agccgcatccccaagattaaact	30533	506494	see also 172 line	-	-
174	KCNH2	NM_000238.2	299	atgccttctaccggaaagatgg	206431	596881	channel, signal transduction	-	long QT syndrome(QT延長症候群)



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						receptor_activity、 kinase_related、 signal_transduction	hepatocyte growth factor receptor	hepatocellular carcinoma(肝癌)、renal cell carcinoma(腎臓癌)、esophageal cancer(食道 癌)、papillary renal carcinoma(腎臓癌)、 astrocytic tumors(星状腫瘍)
175	MET	NM_000245.1	3190	ttgtaagtcccggaagtgaagc	91088	508341		
176	MET	NM_000245.1	3465	agcgtattgtgcatctcaatga	91098	508349	see also 175 line	
177	MET	NM_000245.1	3468	ctgattgtgcatctcaatgaagt	91099	508350	see also 175 line	
178	MET	NM_000245.1	3911	tggcttgcagagagacatgtatg	91113	508359	see also 175 line	
179	MET	NM_000245.1	4294	atgtgaagctactattatgaac	91128	508377	see also 175 line	
180	MTF	NM_000248.2	221	cagtaaccttaccacatttagc	32278	461704	transcription_regulator	Tietz syndrome(ティーツェ病)、Waardenburg syndrome(ワールデンブルグ症候群)
181	MTF	NM_000248.2	668	aggagctcacagcgtatttt	32290	461713	see also 180 line	
182	MLH1	NM_000249.2	1735	ctgttaccagatactactttaa	91706	508504	cell_cycle	colorectal cancer(結腸直腸癌)、colorectal carcinoma(大腸癌)、ataxia telangiectasia(毛細血 管拡張性運動失調症)、nonpolyposis colon cancer(非腺腫性大腸癌)、Turcot syndrome with glioblastoma(膠芽細胞腫に伴うターコート症候 群)、cerebral astrocytoma(大脳星状細胞腫)、 colorectal cancers(結腸直腸癌)、Muir-Torre syndrome(Muir-Torre症候群)、pancreatic cancer(膵臓癌)、familial nervous system tumor syndromes(家族性神経系腫瘍症候群)、gastric colorectal cancer(大腸癌)、glioblastoma(膠芽 腫)、multiple cafe-au-lait spots with leukemia(白 血病におけるカフエオレ斑)、colorectal carcinoma(大腸癌)、ataxia telangiectasia(毛細血 管拡張性運動失調症)、nonpolyposis colon cancer(非腺腫性大腸癌)、colorectal cancers(結 腸直腸癌)、Muir-Torre syndrome(Muir-Torre症 候群)、pancreatic cancer(膵臓癌)、skin
183	MSH2	NM_000251.1	1783	aagccaggatgccattgttaa	16380	451452	adenosinetriphosph atase	
184	MSH2	NM_000251.1	2074	gccccaatatggaggtaaatca	16392	451460	see also 183 line	
185	MSH2	NM_000251.1	2076	cccaatatggaggtaaatcaac	16393	451461	see also 183 line	
186	MSH2	NM_000251.1	2349	gggttagcatgggctatatcaga	16408	451466	see also 183 line	
187	MSH2	NM_000251.1	2412	accattttcatgaactactgc	16413	451471	see also 183 line	
188	MTM1	NM_000252.1	213	tcotttcaatggccccattaagg	192910	586507	phosphatase	myotubular myopathy(ミオパシー)
189	MTM1	NM_000252.1	257	atcgttattttaaagaagtttg	192913	586511	see also 188 line	
190	MTM1	NM_000252.1	370	tcctatgcttagatattacttg	192921	586517	see also 188 line	
191	MTM1	NM_000252.1	374	atgctatgatattacttctgtaa	192922	586518	see also 188 line	
192	MTM1	NM_000252.1	441	cagaagagatatgtttgagatgc	192925	586520	see also 188 line	
193	MTM1	NM_000252.1	784	cagcctcttctgcgtatgagtg	192937	586526	see also 188 line	
194	MTP	NM_000253.1	2216	cagtgaattgatgtccaaatgc	173590	570268	lipid transporter	acanthocytosis(有棘赤血球舞踏病)
195	MTP	NM_000253.1	2347	agggtgctcagctattgatatt	173594	570274	see also 194 line	
196	MTP	NM_000253.1	2348	gggtgctcagctattgatatt	173595	570275	see also 194 line	

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197	MTP	NM_000253.1	2350	gtggtctagctattgatatttca	173596	570276	see also 194 line				
198	MTP	NM_000253.1	2405	gtctaaacccgagtgaaaata	173600	570277	see also 194 line				
199	MUT	NM_000255.1	357	gaacatatcctaccatgataac	235110	619750	-			methy/malonyl-CoA mutase	methy/malonicaciduria(メチルマロニック酸グリシン尿症)
200	MUT	NM_000255.1	547	tggaatgctgagtgctgtattg	235116	619758	see also 199 line				
201	MYO5A	NM_000259.1	1390	ggctactgccacagagacataca	93166	509668	-			myosin ATPase	-
202	MYO5A	NM_000259.1	2342	ccctcaggtggaacttaccaga	93189	509691	see also 201 line				
203	MYO5A	NM_000259.1	2738	gtccgcaggaggtacacagattag	93202	509709	see also 201 line				
204	MYO5A	NM_000259.1	2741	cgCaggagggtacacagattagacg	93203	509711	see also 201 line				
205	MYO7A	NM_000260.1	4383	gtgtgtcgcgaggagtcgaagtttgg	93506	509877	-			myosin ATPase	deafness(聾), Senechal-Usher syndrome(ゼニアール・アッシャー症候群)
206	NAGLU	NM_000263.2	715	gccccaacaggtaccgctattacc	200984	592630	-			alpha-N-acetylglucosaminidase	mucoopolysaccharidosis(ムコ多糖体症), SanFilippo syndrome(サンフィリッポ症候群), nevoid basal cell carcinoma syndrome(母斑性基底細胞癌症候群), basal cell nevus syndrome(基底細胞母斑症候群), medulloblastoma(髄芽腫), familial nervous system tumor syndromes(家族性神経系腫瘍症候群), skin cancer(皮膚癌)
207	PTCH	NM_000264.2	417	ctgtggctgaagagcgaagtttca	245625	633183	receptor activity, signal transduction, cell cycle			patched receptor	
208	PTCH	NM_000264.2	920	gacagatccctcttagttaac	245640	633200	see also 207 line				
209	PTCH	NM_000264.2	2197	ccacacgcacgtgtactacacc	245658	633227	see also 207 line				
210	PTCH	NM_000264.2	2486	ttgtgggggtcagccctttatgg	245661	633229	see also 207 line				
211	NF1	NM_000267.1	260	ttcgacgagcagcttccaataaa	294444	665363	signal transduction, cell cycle			enzyme inhibitor	bladder transitional cell carcinoma(膀胱移行上皮癌), pilocystic astrocytomas(アストロサイトーマ), brain stem glioma(脳幹部腫瘍), neuroblastoma(神経芽細胞腫), neurofibromatosis(神経線維腫症), Watson syndrome(ワトソン症候群), squamous cell carcinoma(扁平上皮細胞癌), nerve sheath tumors(神経鞘腫瘍), pheochromocytoma(褐色細胞腫), visual Pathway and hypothalamic glioma(視覚伝導路および視床下部神経膠腫), familial nervous system tumor syndromes(家族性神経系腫瘍症候群)
212	NF1	NM_000267.1	487	atgtcttctgtgggcaaccaagg	294454	665370	see also 211 line				
213	NF1	NM_000267.1	656	aacttcaatgcagctttagtcg	294457	665375	see also 211 line				
214	NF1	NM_000267.1	1478	ttggattgtggccttaagattga	294469	665397	see also 211 line				
215	NF1	NM_000267.1	1623	aagtaacaagccttaaatataa	294475	665406	see also 211 line				
216	NF1	NM_000267.1	4971	atgttgacagggagttcaaaact	294514	665512	see also 211 line				
217	NF1	NM_000267.1	5092	cgggcttagcaatgccttttaaa	294517	665517	see also 211 line				
218	NF1	NM_000267.1	5093	gggcttagcaatgccttttaaac	294518	665518	see also 211 line				
219	NF1	NM_000267.1	6995	gacacttacaacagcgaagtct	294578	665583	see also 211 line				
220	NF1	NM_000267.1	7004	aacagtcgaagttctgtatagaac	294580	665584	see also 211 line				
221	NF1	NM_000267.1	8016	tagctacactggtaaatatacc	294610	665616	see also 211 line				
222	NF1	NM_000267.1	8162	tgccaagatccaatttgttaaa	294619	665620	see also 211 line				

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223	NF1	NM_000267.1	8458	tagtatactgcacaccttaacc	294630	665628	see also 211 line		ependymoma(上皮細胞腫)、neurofibromatosis(神経線維腫症)、CNS Tumours(中枢神経腫瘍)、meningioma(メニンジオーマ)、nerve sheath tumors(神経鞘腫瘍)、malignant mesothelioma(悪性中皮腫)、mesothelioma(中皮腫)、astrocytic tumors(星状腫瘍)、familial nervous system tumor syndromes(家族性神経系腫瘍症候群)
224	NF1	NM_000267.1	8628	ctggcagttcaaacgtaatagc	294637	665634	see also 211 line		
225	NF2	NM_000268.2	1223	gtgacaagaggtttactattaaa	291993	661873	cell_cycle	-	
226	NF2	NM_000268.2	1284	ctcaaaagcttcgtgtaataagc	291997	661875	see also 225 line		
227	OCRL	NM_000276.3	1124	ttgggatgatctcttctatttt	196543	588985	phosphatase	-	oculocerebrorenal syndrome of Lowe(眼脳腎症候群)
228	OCRL	NM_000276.3	1531	cagcgcaacacagaaaaagcttt	196559	589001	see also 227 line		
229	OCRL	NM_000276.3	2147	tggatcgaggaagattactctc	196574	589023	see also 227 line		
230	OCRL	NM_000276.3	2150	atcgaggaagattactctcttg	196575	589024	see also 227 line		
231	PAX2	NM_000278.2	1449	caggcatcagagcacatcaaatc	8862	701931	transcription_regulat	-	optic nerve coloboma with renal disease(腎臓病に伴う視神経欠損)
232	PAX2	NM_000278.2	1450	aggcatcagagcacatcaaatca	8863	701932	see also 231 line		
233	PAX2	NM_000278.2	1503	ctgaccctggccttgatgaagt	8864	701935	see also 231 line		
234	PAX6	NM_000280.1	534	gtgcgaattcccgaaattctgc	8904	447556	transcription_regulat	-	Wilms tumor(ウィルムス腫瘍)、aniridia(無虹彩)、keratitis(角膜炎)、medulloblastoma(髄芽腫)、alcoholism(アルコール依存症)
235	PAX6	NM_000280.1	748	gtctgacaaacagataacatacc	8913	447564	see also 234 line		
236	PAX6	NM_000280.1	826	atggcgcagacggcatgatga	8917	447567	see also 234 line		
237	PAX6	NM_000280.1	828	ggcgcagacggcatgtatgata	8918	447568	see also 234 line		
238	PAX6	NM_000280.1	830	gcgcagcggcatgtatgataaa	8919	447570	see also 234 line		
239	PAX6	NM_000280.1	831	cgccagcggcatgtatgataaac	8920	447571	see also 234 line		
240	PAX6	NM_000280.1	845	atgataaactaaggatgtgaac	8921	447574	see also 234 line		
241	PAX6	NM_000280.1	1140	aagctagcagcgaataatagatc	8925	447579	see also 234 line		
242	PAX6	NM_000280.1	1180	caggtatggttttaatacgaag	8926	447580	see also 234 line		
243	PAX6	NM_000280.1	1507	gtgaatggcgcggagttatgatac	8933	447585	see also 234 line		
244	PAX6	NM_000280.1	1512	tggcgcggatgtatgatactaca	8934	447586	see also 234 line		
245	PCBD	NM_000281.1	296	ggcgaagttcatcgacaagtag	112354	715632	transcription co-activator	hyperphenylalaninemia(高フェニルアラニン血症)	
246	PCCA	NM_000282.1	315	agctccaccagtaaaagatacc	95850	511332	propionyl-CoA carboxylase	propionyl-CoA carboxylase deficiency(プロピオニルCoAカルボキシラーゼ欠損症)、propionic acidemia(プロピオン酸血症)	
247	PCCA	NM_000282.1	771	tctctgcatatagaatccagg	95867	511346	see also 246 line		
248	PEPD	NM_000285.1	627	aggccaccgtgagtaataagag	162019	698237	metallocarboxypeptidase D	-	
249	PEPD	NM_000285.1	628	ggccaccgtgagtaataagagg	162020	698238	see also 248 line		
250	PEX12	NM_000286.1	614	gtgtagcacacagacagtttaat	134552	688537	zinc binding	peroxisome biogenesis disorder(ペルオキシソーム生合成障害)、Zellweger syndrome(ツェルウェーガー症候群)	

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251	PEX12	NM_000286.1	615	tgttagcacaggacagtttaatg	134553	688538	see also 250 line				
252	PEX12	NM_000286.1	912	ttctccctatctgaagtggaag	134559	688545	see also 250 line				peroxisome biogenesis disorder(ペルオキシノーム合成障害)、chondrodysplasia(軟骨異形成)
253	PEX7	NM_000288.1	416	aggaagtgatagtgttgattgg	177198	652167	receptor_activity	protein transporter			
254	PEX7	NM_000288.1	731	gggcgggttgactgtgtttgaga	177201	652175	see also 253 line				
255	PFKM	NM_000289.3	84	tgttgagatgcccaaggatga	166401	563810	kinase_related	magnesium binding			glycogen storage disease(グリコーゲン蓄積症)、diabetes(糖尿病)
256	PFKM	NM_000289.3	2031	taggaattttgccactaagtg	166437	563843	see also 255 line				
257	PHKA2	NM_000292.1	1388	gtgaatcgatcccttaataaga	122020	527221	kinase_related	phosphorylase			
258	PHKA2	NM_000292.1	1393	atcgatcccttaataagaagatt	122021	527222	see also 257 line				glycogen storage disease(グリコーゲン蓄積症)
259	PHKA2	NM_000292.1	1394	tcgatcccttaataagaagattt	122022	527223	see also 257 line				
260	PHKA2	NM_000292.1	3360	cagggtccccgtgggattctacc	122082	527266	see also 257 line				
261	PHKB	NM_000293.1	2256	gggtatatactgctcaaaagagaag	122162	816932	kinase_related	phosphorylase kinase, regulator			
262	PKD2	NM_000297.2	792	gagctccaatgtgtactactaca	120987	538970	channel	voltage-gated sodium channel			polycystic kidney disease(多発性嚢胞腎)
263	PKP1	NM_000299.1	401	agcggcagaagtcgaagtcttcc	128261	530408	signal transduction	structural constituent of epidermis			ectodermal dysplasia(外胚葉性形成異常)
264	POU3F4	NM_000307.1	621	ttgcgcaaaacaattcaacaaga	9688	447868	transcription_regulat	transcription factor			deafness(聾)
265	POU3F4	NM_000307.1	622	tcgcaaaacaattcaacaaga	9689	447869	see also 264 line				
266	PXR1	NM_000319.3	866	gagccaagtcagctatagagttg	177230	652140	receptor_activity	protein transporter			adrenoleukodystrophy(副腎脳白質ジストロフィー)、peroxisome biogenesis disorder(ペルオキシノーム合成障害)
267	QDPR	NM_000320.1	639	accccgatgaacaggaaatcaat	225728	614596	-	electron			phenylketonuria(フェニルケトン尿症)
268	RB1	NM_000321.1	1256	ctccagtaggactgttatgaac	10093	698531					hepatocellular carcinoma(肝癌)、bladder transitional cell carcinoma(膀胱移行上皮癌)、 chondrosarcoma(軟骨肉腫)、bladder cancer(膀胱癌)、breast cancer(乳癌)、lung cancer(肺癌)、 osteosarcoma(骨髄性骨肉腫)、 retinoblastoma(網膜芽腫)、Ewing's sarcoma(ユーイング骨肉腫)、leukemia(白血病)、 testicular cancer(嚢丸癌)、nerve sheath tumors(神経腫瘍)、squamous cell cancer(扁平
269	RB1	NM_000321.1	1507	atggaatccatgcttaaatcaga	10105	698540	transcription_regulat	translation regulator			
270	RB1	NM_000321.1	1513	tccatgcttaaatcagaagaaga	10106	698541	see also 268 line				
271	RB1	NM_000321.1	2492	ttctctgaagcccttacaagttt	10134	698569	see also 268 line				
272	RB1	NM_000321.1	2493	tcctcgaagcccttacaagtttc	10135	698570	see also 268 line				

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273	RET	NM_000323.2	3346	gcctcctctccacatggtatga	98994	513384	-	thyroid cancer(甲状腺癌)、papillary Thyroid Carcinomas(副甲状腺乳頭癌)、multiple endocrine neoplasia(多発性内分泌腫瘍)、thyroid carcinoma(甲状腺癌)、ganglioneuromatosis of the alimentary tract(神経節神経腫症)、Hirschsprung disease(先天性ヒルシュシュプルング病)、medullary thyroid carcinoma(髄質甲状腺癌)、pheochromocytoma and familial amyloid-producing thyroid carcinoma(褐色細胞腫及びアミロイド産生甲状腺癌腫)、
274	RET	NM_000323.2	3504	ctcagcggcaaaattaatggaca	99000	513390	see also 273 line	
275	RLBP1	NM_000326.3	1135	atgtggtcaagccctcttgaag	179790	573082	-	retinitis pigmentosa(色素性網膜炎)
276	RPE65	NM_000329.1	547	caggttgatcttggcaactatgt	135280	741196	-	dystrophy(ジストロフィー)、amaurosis congenita of Leber(レーバー先天性黒内障)、retinitis pigmentosa(色素性網膜炎)
277	RPE65	NM_000329.1	782	ttggtctgactcccaactatct	135291	741203	see also 276 line	
278	RPE65	NM_000329.1	783	tggtctgactcccaactatct	135292	741204	see also 276 line	
279	RPE65	NM_000329.1	792	tcacaactatctgtttttgtg	135294	741206	see also 276 line	
280	RPE65	NM_000329.1	1149	taggagatatgtacttctttga	135303	741213	see also 276 line	
281	SCA1	NM_000332.1	946	accaagagcggagcaacgaatgc	54643	475439	-	spinocerebellar ataxia(脊髄小脳失調)、schizophrenia(精神分裂病)
282	SCA1	NM_000332.1	2518	ttcccaagagcggagcaacttcaac	54653	475456	see also 281 line	
283	SCA7	NM_000333.1	1354	atggatggcacactactgaaatc	284078	689105	-	spinocerebellar ataxia(脊髄小脳失調)
284	SLC12A1	NM_000338.1	896	atgatgttgatcccaacaaatga	256601	640521	-	Bartter syndrome(バーター症候群)
285	SLC12A1	NM_000338.1	2402	aactacgtgggaatcacaatga	256645	640553	see also 284 line	
286	SLC12A1	NM_000338.1	2584	aggcatccggagcgtgttttaaaa	256656	640558	see also 284 line	
287	SLC2A2	NM_000340.1	904	ggcaattcttattagtcagattat	259120	643348	-	diabetes mellitus(糖尿病)、Fanconi syndrome(ファンコニ症候群)、hepatic glycogenosis(肝糖原病)、diabetes(糖尿病)
288	SOX9	NM_000346.2	1545	gtcccagcgaacgcacatcaaga	40642	468061	transcription_regulator or transcription factor	campomelic dysplasia(屈曲肢異形成症)
289	SPTB	NM_000347.3	1206	tcocggatgagagccacaacaatca	119235	524092	-	spherocytosis(球形赤血球症)、breast cancer(前立腺癌)、pseudohemaphroditism(仮性半陰陽)、pseudovaginal perineoscrotal hypospadias(尿道下裂)
290	SRD5A2	NM_000348.2	613	cacaagtggtgctgtttacgtat	223957	612219	-	

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291	ABCA4	NM_000350.1	897	ttggggagggaattattctgata	68854	490816	-	adenosinetriphosphatase	cone-rod dystrophy(錐体・桿体ジストロフィー)、age related macular degeneration(加齢黄斑変性症)、macular dystrophy(遺伝性黄斑変性症)、retinitis pigmentosa(色素性網膜炎)、Stargardt disease(スタルガルト病)
292	ABCA4	NM_000350.1	1639	tggctctggataaagtttgaag	68873	490841	see also 291 line		
293	ABCA4	NM_000350.1	1874	tgaagatttcggatcatctgg	68879	490845	see also 291 line		
294	ABCA4	NM_000350.1	3750	gtgcatgttcaagaactatct	68897	490877	see also 291 line		
295	ABCA4	NM_000350.1	4722	gagcaaatctgggtcaatgaac	68912	490900	see also 291 line		
296	TIMP3	NM_000362.3	1683	gaccgacatgctctccaattcg	284751	663661	apoptosis	metalloendopeptidase inhibitor	Sorsby fundus dystrophy、pseudo-inflammatory(-)
297	TSC1	NM_000368.2	2292	ctccgagaccagttgcttttact	305939	712554	cell_cycle、signal transduction		bladder transitional cell carcinoma(膀胱移行上皮癌)、tuberosus sclerosis(結節性硬化症)、renal cell carcinoma(腎細胞癌)、squamous cell carcinoma(扁平上皮細胞癌)、familial nervous system tumor syndromes(家族性神経系腫瘍症候群)
298	TSC1	NM_000368.2	2427	atgaagatcagttgaagtaca	305941	712555	see also 297 line		
299	UMPS	NM_000373.1	1311	ggctccgagtaagcatgaacc	212768	601412	-	transferase、transferring glycosyl groups	oroticaciduria(オロチン酸尿症)
300	VDR	NM_000376.1	813	tggtcagttacagcatcacaag	13923	449829	transcription_regulator、receptor_activity、	VDR/RXR alpha heterodimer	vitamin D-resistant rickets(低リン酸血性ビタミンD抵抗性くる病)
301	WT1	NM_000378.2	1322	caggctgcaataagagatatttt	13945	449857	transcription_regulator、cell_cycle		desmoplastic small round cell tumor(繊維形成性円形細胞腫瘍)、Wilms tumor(ウィルムス腫瘍)、bladder cancer(膀胱癌)、Denys-Drash syndrome(デニス・ドランシュ症候群)、Frasier syndrome(WAGR症候群)、leukemia(白血病)、nephroblastoma(腎芽細胞腫)、squamous cell carcinoma(扁平上皮細胞癌)、malignant
302	XDH	NM_000379.2	3815	tcgcgcgactgccccacaagaag	164749	562663	-	TBP-associated factor 125	xanthinuria(キサンチン尿症)
303	MID1	NM_000381.1	654	tacagcccatgctgtgattgagc	133903	558397	-		Opitz/BBB syndrome(オピッツ病)
304	MID1	NM_000381.1	822	gagtgagcgtatgacaaattga	133905	558400	see also 303 line		
305	MID1	NM_000381.1	824	gtgagcgtatgacaaattgaag	133906	558401	see also 303 line		
306	BLMH	NM_000386.2	553	gacaaggtgaacgctgtatttt	187933	581695	-		
307	BLMH	NM_000386.2	557	aggtgaacgctgtattttcttc	187934	581696	see also 306 line	carboxypeptidase	Alzheimer disease(アルツハイマー病)
308	BLMH	NM_000386.2	563	aacgctgtattttcttcttgagt	187936	581697	see also 306 line		

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309	CASR	NM_000388.2	1578	caggtcgagacccttacatag	241438	629675	gpcr, receptor activity, signal transduction	metabotropic glutamate, GABA-B-like receptor	familial hypocalciuric hypercalcaemia(家族性低カルシウム尿性高カルシウム血症)、hyperparathyroidism(副甲状腺機能亢進症)、hypocalciuric hypercalcaemia(低カルシウム血症)、hypocalciuric hypercalcaemia(低カルシウム血症/高カルシウム血症)
310	CHM	NM_000390.1	1129	cggatggcaacactccatttt	216773	707669	-	RAB-protein	choroideremia(先天性脈絡膜欠如)
311	ABCC2	NM_000392.1	3261	caccacagggccgattgtgaac	70296	492270	-	geranylgeranyltransferase	-
312	ABCC2	NM_000392.1	3262	accacagggccgattgtgaaca	70297	492271	see also 311 line	organic anion transporter	hyperbilirubinemia(抱合型高ビリルビン血症)
313	ABCC2	NM_000392.1	3834	ttgtgctgttgagcgaataact	70302	492284	see also 311 line	-	-
314	ABCC2	NM_000392.1	4072	ctgcctcttcagaaactcttagagg	70306	492294	see also 311 line	-	-
315	COL5A2	NM_000393.2	2668	gccaaatggagctgtgtgttttg	288332	659739	-	Homoobox protein PKNOX1	Ehlers-Danlos syndrome(エーラー-ダンロス症候群)
316	CRYAA	NM_000394.2	150	cggcgagggcccttttgagtatg	289510	659900	-	structural constituent of eye lens	-
317	CTSK	NM_000396.2	249	atgaatctctcggcgtttaatt	187880	581636	-	cathepsin K	rheumatoid arthritis(関節リウマチ)、pseudosyndostosis(ピクノディストーシス)
318	CTSK	NM_000396.2	480	tcgactatgagaaagaaaggatat	187885	581647	see also 317 line	-	-
319	CYBB	NM_000397.2	807	aacctctactgaacttggaatg	226516	613664	channel	hematopoietic-associated factor 1A complex	atherosclerosis(粥状硬化症)、chronic granulomatous disease(慢性肉芽腫症)
320	CYBB	NM_000397.2	1212	agctatgaggtggtgatgtagt	226523	613680	see also 319 line	-	-
321	EXT2	NM_000401.1	1122	tggctgtggcggcctttctacg	213370	601718	signal transduction, cell cycle	transferase, transferring glycosyl groups	chondrosarcoma(軟骨肉腫)、hereditary multiple exostoses(遺伝性多発性外骨腫症)、multiple exostoses(多発性外骨腫症)
322	GM2A	NM_000405.3	237	tcctgggataactgtgatgaagg	298547	672482	-	sphingolipid activator protein	GM2 gangliosidosis(GM2ガングリオリシス)
323	GPD2	NM_000408.1	1010	ctgtgcgcaaaatggatgataaa	146580	548897	-	glycerol-3-phosphate dehydrogenase	diabetes mellitus(糖尿病)、diabetes(糖尿病)
324	GPD2	NM_000408.1	1012	gtgcgcaaaatggatgataaaga	146581	548898	see also 323 line	-	-
325	HLCS	NM_000411.3	2698	accgcaggaaatgggcttaataag	232175	617097	-	biotin-[propionyl-CoA-carboxylase (ATP-hydrolyzing)] ligase	multiple carboxylase deficiency(多発性カルボキシラーゼ欠損症)
326	HLCS	NM_000411.3	2927	gtgaagtggcccaacgatatta	232179	617101	see also 325 line	-	-
327	LAMA2	NM_000426.2	633	atgaggtcatctgcacttcattt	290696	661415	-	structural molecule	congenital muscular dystrophy(先天性筋ジストロフィー)
328	LAMA2	NM_000426.2	2467	ctgtgcctgtccactcaatattcc	290748	661462	see also 327 line	-	-
329	LAMA2	NM_000426.2	3888	cacctactatgctagaattatc	290774	661486	see also 327 line	-	-

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[illegible]



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357	TCF2	NM_000458.1	1433	cagcacccttgacgaataatccaca	12937	449361	see also 355 line kinase_related, receptor_activity, signal_transduction	transmembrane receptor protein tyrosine kinase	venous malformations(静脈奇形)
358	TEK	NM_000459.1	964	gggtgcaagcttattgtgtgt	102305	516105			
359	TEK	NM_000459.1	3342	atgaggtgatgactaatgaga	102367	516159	see also 358 line		
360	TEK	NM_000459.1	3397	atcatttgcceagatattgtgt	102369	516163	see also 358 line		
361	THRB	NM_000461.2	769	caggaatgtgcctttaagaaatg	13344	449555	transcription_regulat or、	Thyroid hormone receptor beta-2	thyroid hormone resistance(甲状腺ホルモン不応症)
362	THRB	NM_000461.2	1133	tgggtgatttgcacaaaagtgtg	13355	449561	see also 361 line		
363	THRB	NM_000461.2	1443	tgcctgtgtgagagaaatagaaa	13357	449565	see also 361 line		
364	UBE3A	NM_000462.2	168	ctgtccaacttttcttctgtatgg	231325	541872	-	-	Angelman syndrome(アンゲルマン症候群)
365	UBE3A	NM_000462.2	831	ctctcgagatcctaatattctga	231344	541897	see also 364 line		
366	UBE3A	NM_000462.2	1472	tggattattattatgacaataga	231360	541916	see also 364 line		
367	UBE3A	NM_000462.2	1855	ctggctcgtgctatttacaataa	231373	541930	see also 364 line		
368	UBE3A	NM_000462.2	2029	atgatcactttccagatatcaca	231380	541934	see also 364 line		
369	UBE3A	NM_000462.2	2041	cagatatcacagacagatctttt	231381	541935	see also 364 line		
370	UBE3A	NM_000462.2	2127	caggaagaatttgcattctttt	231385	541969	see also 364 line		
371	UBE3A	NM_000462.2	2280	tggaaagccggaatcttagattcc	231391	541949	see also 364 line		
372	UBE3A	NM_000462.2	2283	aagcgggaattatagatttccaag	231392	541950	see also 364 line		
373	BARD1	NM_000465.1	2319	gggttggcgaaggcgaagtctgg	324001	689791	-	-	breast cancer(乳癌)、ovarian cancer(原発性卵 adrenoleukodystrophy(副腎脳白質シストロ フィー)、Refsum disease(レフサム症候群)、 Zellweger syndrome(ツェルウェーガー症候群)
374	PEX1	NM_000466.1	1489	atgcttccttttgtaatatcaga	96420	794091	-	peroxisome- assembly ATPase	
375	AMPD3	NM_000480.1	1168	ccgatggcccccacacgaacacctat	203684	594081	-	AMP deaminase	
376	AMPD3	NM_000480.1	1190	ttgtcacccggcactgaacttcc	203687	594082	see also 375 line		
377	APP	NM_000484.1	679	aagttccgaggggtagagtttgt	128978	532117	apoptosis、 signal_transduction	Upstream stimulatory factor	Alzheimer disease(アルツハイマー病)、 angiopathy(血管障害)、schizophrenia(精神分裂症)
378	APP	NM_000484.1	1723	atccggtcccgaggttatgacaca	128995	532130	see also 377 line		
379	ATRX	NM_000489.2	6677	tggcacaactaagacctgtttatg	1295	455796	transcription_regulat or	-	mental retardation(精神遅滞)、alpha thalassemia/mental retardation syndrome(地中海性貧血)、Juberg-Marsidi syndrome(Juberg- Marsidi症候群)、Sutherland-Haas X-linked mental retardation syndrome(Sutherland-Haas X 連鎖精神遅滞症候群)、alpha thalassemia myelodysplasia syndrome(骨髄形成不全性α地
380	ATRX	NM_000489.2	6722	aaccatggaagataagatttatg	1298	455799	see also 379 line		
381	ATRX	NM_000489.2	7066	gactgaccatgcgtttcaacata	1298	455810	see also 379 line		
382	ATRX	NM_000489.2	7426	gtgttcaggaataactattgaac	1307	455828	see also 379 line		
383	ATRX	NM_000489.2	7559	ttcttaactaccagcagattgata	1310	455832	see also 379 line		
384	CFTR	NM_000492.2	3058	ttctccaaagatatagcaatttt	76718	498044	channel	-	
385	CFTR	NM_000492.2	3423	ctggttccaaatgagaatagaaa	76727	498060	see also 384 line		
386	COL10A1	NM_000493.2	1524	cccagctggcatgacgaactaaga	287633	659247	-	extracellular matrix structural constituent	metaphyseal chondrodysplasia(骨幹端軟骨異形 成症)

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387	COL10A1	NM_000493.2	1922	atgtttgggtaggccctgtataag	287641	659257	see also 386 line			diffuse esophageal leiomyomatosis(びまん性食道平滑筋腫)、Alport syndrome(アルポート症候)
388	COL4A5	NM_000495.3	4667	ctcctgtatgtacaaggaaataa	288263	659606	-		-	
389	CRYBB2	NM_000496.1	321	cagccaagagacacaagatcatcc	289564	659933	-		structural constituent of eye lens	cataract(白内障)
390	EYA1	NM_000503.3	747	ctccaatggcaccggaagttaa	204958	595733	phosphatase, transcription_regulat	or	-	renal dysplasia(腎形成異常)
391	EYA1	NM_000503.3	754	tggcacccgaagttaaaacagagc	204959	595736	see also 390 line			
392	EYA1	NM_000503.3	1274	cagcagactatccgtttatcc	204973	595749	see also 390 line			
393	EYA1	NM_000503.3	1308	agcgtcagctacacacagtattat	204974	595751	see also 390 line			
394	EYA1	NM_000503.3	1309	gggtcagctacacacagtattata	204975	595752	see also 390 line			
395	EYA1	NM_000503.3	1662	ctggctctacgccacacagatat	204983	595756	see also 390 line			
396	EYA1	NM_000503.3	1663	tgggtctctacgccacacagatatg	204984	595757	see also 390 line			
397	EYA1	NM_000503.3	1959	gggttaaaagagatctacaacacc	204990	595765	see also 390 line			
398	GDNF	NM_000514.2	780	aacctgtgttaccattatctaag	169225	566029	apoptosis, signal transduction		growth factor	Hirschsprung disease(先天性ヒルシュシュブルン病)、Parkinson disease(パーキンソン病)
399	GDNF	NM_000514.2	783	ctggtttaccattatctaagaaa	169227	566030	see also 398 line			
400	HOXA13	NM_000522.2	34	atcgagccaccgtcagtctct	329689	697112	transcription_regulat	or	transcription factor	-
401	HOXA13	NM_000522.2	849	cggctggaacggccaaatgtact	329694	697118	see also 400 line			
402	OTC	NM_000531.3	1004	tggctcagtggtataaacaatca	180058	573200		ornithine carbamoyltransferase		hyperammonemia(高アンモニア血症)
403	PLP1	NM_000533.2	255	agctaattgagacctattctcc	292352	662127		structural molecule		Pelizaeus-Merzbacher disease(ペリツェウス・メルツバハ病)、spastic paraplegia(痙性対麻痺)
404	PMS1	NM_000534.2	490	ttggtcaaggtacacactgaact	35428	463715	cell cycle, transcription_regulat			colorectal cancer(結腸直腸癌)、colorectal carcinoma(大腸癌)、ataxia telangiectasia(毛細血管拡張性運動失調症)、hereditary nonpoyposis colon cancer (HNPCC)(遺伝性非腺腫性大腸癌)、colorectal cancers(結腸直腸癌)
405	PMS1	NM_000534.2	2390	gccactggaaagccaattatgt	35487	463774	see also 404 line		DNA binding	
406	RHO	NM_000539.2	332	agccgtggctgacctcttcacatgg	238421	629104	gpcr, receptor activity, signal transduction		G-protein coupled photoreceptor	congenital stationary night blindness(先天性夜盲症)、retinitis pigmentosa(色素性網膜炎)
407	TSHB	NM_000549.1	150	ttgtatgacacagggatatacaatg	170144	567025	signal transduction, gpcr		Thyroid hormone receptor beta-2	Hypothyroidism(甲状腺機能低下症)、chondrodysplasia(軟骨異形成症)、brachydactyly(短指症)
408	GDF5	NM_000557.2	975	agcagagtagctggttgacatt	131507	565568	signal transduction		protein binding	C8 alpha deficiency(補体第8成分欠損症)
409	C8A	NM_000562.1	1496	tcctgtgttatcgattttgaga	312037	760675	-		complement	
410	IGFBP5	NM_000599.1	1041	gcgggtttgctcctcaacgaaag	124917	528747	signal transduction		insulin-like growth factor binding	
411	IGFBP5	NM_000599.1	1405	ttgtgaccgcaaggattctaca	124920	528751	see also 410 line			

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412	IGFBP5	NM_000599.1	1407	gtgacgcgaagaggtattctacaag	124921	528752	see also 410 line				
413	IGFBP5	NM_000599.1	1410	accgcaagaggtattctacaagaga	124922	528753	see also 410 line				
414	FGFR1	NM_000604.2	1657	ttgaagaactgcgtgagtgtaataac	82211	502270	receptor_activity, kinase_related, signal_transduction			breast cancer(乳癌)、Jackson-Weiss syndrome(Jackson-Weiss症候群)、Li-Fraumeni syndrome(リー-フラウメニ症候群)、pancreatic cancer(膵臓癌)、Pfeiffer syndrome(プファイアー症候群)、Pfeiffer type acrocephalosyndactyly(プファイアー型短頭合指症)、leukemia(白血病)、Kallmann syndrome(カ	
415	SLC11A2	NM_000617.1	277	ttgttttagcttctgtaaaactct	266351	656771	iron transporter				
416	SLC11A2	NM_000617.1	1562	atgtactttgtagtggtttatgt	266382	656795	see also 415 line				
417	NOS1	NM_000620.1	2007	acggagatgtcaactacatctgt	121786	528894	nitric oxide synthase				
418	NOS1	NM_000620.1	4908	aagtgaaccaaccgcttagatct	121821	528940	see also 417 line				
419	NOS2A	NM_000625.3	2166	ctgagccttgctcatgacatig	121846	528961				diabetes(糖尿病)	
420	LTBP1	NM_000627.1	1017	atgcctaatgtgtagtgtttga	125052	709545	receptor_activity, transcription_regulator			growth factor binding	
421	SOD2	NM_000636.1	563	cacgcttactacattcagataaa	162345	561865	or			translational regulator	diabetes(糖尿病)
422	SOD2	NM_000636.1	564	acgcttactactctcagataaa	162346	561866	see also 421 line				
423	GSR	NM_000637.1	290	tggatgtaccacaaaggtaa	166871	564154				heavy metal	hemolytic anemia(溶血性貧血)
424	GSR	NM_000637.1	1048	tcgtagagaattccagaatacc	166894	564176	see also 423 line				
425	ABAT	NM_000663.2	753	gggaggaccatgggttgcttagc	218139	606075			4-aminobutyrate aminotransferase	GABA-transaminase deficiency(γアミノ酪酸トランスアミナーゼ欠損症)	
426	ADRA1B	NM_000679.2	214	gcccactgggagaggttgaaaaa	237746	623475	receptor_activity, kinase_related, signal_transduction			alpha1-adrenergic receptor	atherosclerosis(粥状硬化症)
427	ADRA1B	NM_000679.2	999	gagttccatagctgtcacaacttt	237755	623484	see also 426 line				
428	ADRB1	NM_000684.1	457	gggagtagcgcctctctcttcgc	237781	623522	receptor_activity, signal_transduction			beta1-adrenergic receptor	
429	AGTR2	NM_000686.3	710	acgtcagaaccattgaatactta	176672	623601	receptor_activity, kinase_related, apoptosis, signal_transduction			protein kinase inhibitor	
430	AGTR2	NM_000686.3	1141	cagaagctccgagtggttttag	176683	623617	see also 429 line				
431	ATP1A2	NM_000702.1	700	ctgacctccggatcatctctct	72624	494392			sodium/potassium-exchanging	hemiplegic migraine(片麻痺性片頭痛)	
432	ATP1A2	NM_000702.1	814	cccgcaatatctgtttctctcc	72628	494393	see also 431 line				
433	ATP4A	NM_000704.1	1819	gcgggacttgatccatgattga	73068	494682			plasma membrane cation-transporting ATPase		

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434	BCKDHA	NM_000709.2	406	gccggatctcttctacatgacc	225415	611917	-		alpha-ketoacid dehydrogenase voltage-gated calcium channel	maple syrup urine disease(メーブルシロップ尿症)
435	CACNA1B	NM_000718.1	4111	cagggtcagatttgattatg	74787	496912	channel			
436	CACNA1B	NM_000718.1	4515	ggcagtggttcagataagacg	74791	496923	see also 435 line			
437	CACNA1B	NM_000718.1	5361	ctgcgtgaggcgcatcagttac	74800	496934	see also 435 line			
438	CACNA1B	NM_000718.1	5362	tgcgttgaggcgcatcagttaca	74801	496935	see also 435 line			
439	CACNA1B	NM_000718.1	5370	ggcgcatcagttacatgacatg	74803	496937	see also 435 line			
440	CACNA1B	NM_000718.1	5463	agcgctggttcgcatgaacatg	74806	496939	see also 435 line			
441	CACNA1B	NM_000718.1	5464	ggcgctggttcgcatgaacatgc	74807	496940	see also 435 line			
442	CACNA1C	NM_000719.3	305	aaccaccaaggttcacactatgg	138479	544689	channel		voltage-gated calcium channel	-
443	CACNA1C	NM_000719.3	3548	aagttgaccttgacaatgttct	138515	544735	see also 442 line			
444	CACNA1C	NM_000719.3	6371	ctagtgaagcagctcttgatttc	138528	544759	see also 442 line			
445	CACNA1D	NM_000720.1	375	agcaatacgcgaagagcaaaaa	138532	544775	channel		dihydropyridine- sensitive calcium channel	alcoholism(アルコール依存症)
446	CACNA1D	NM_000720.1	461	atcgaagagcctgcattagtat	138533	544779	see also 445 line			
447	CACNA1D	NM_000720.1	462	tcgaagagcctgcattagttata	138534	544780	see also 445 line			
448	CACNA1D	NM_000720.1	466	aagagcctgcattagttatagtg	138535	544781	see also 445 line			
449	CACNA1D	NM_000720.1	933	ttcacatagcccttttgattata	138547	544800	see also 445 line			
450	CACNA1D	NM_000720.1	3792	cgcttcgaatacacatgatgttt	138594	544848	see also 445 line			
451	CACNA1D	NM_000720.1	3793	gccttcgaatacacatgatgtttg	138595	544849	see also 445 line			
452	CACNA1D	NM_000720.1	4004	atcgaatagcgcagcattataga	138601	544853	see also 445 line			
453	CACNA1D	NM_000720.1	5006	ttctgatcacagcactactttag	138619	544868	see also 445 line			
454	CACNA1D	NM_000720.1	5091	ttgcctcacagcgggattaaagg	138621	544869	see also 445 line			
455	CACNA1D	NM_000720.1	5094	ccctacagcgggattaaaggaca	138622	544870	see also 445 line			
456	CACNA1D	NM_000720.1	5236	tggaaaccatgtcaatcatgta	138630	544873	see also 445 line			
457	CACNA1E	NM_000721.1	370	ctgttcattctcggagaagataa	138655	544902	channel		voltage-gated calcium channel	-
458	CACNA1E	NM_000721.1	429	ggcgcatcttgatcatatgacc	138657	544903	see also 457 line			
459	CACNA1E	NM_000721.1	919	ttcatgaacaattcaggatttct	138664	544906	see also 457 line			
460	CACNA1E	NM_000721.1	922	atgaacaattcaggatttctaga	138665	544907	see also 457 line			
461	CACNA1E	NM_000721.1	1101	cactgtctgtacaataccaatg	138669	544912	see also 457 line			
462	CACNA1E	NM_000721.1	2196	gtgtctgtccatctacttctatg	138701	544935	see also 457 line			
463	CACNA1E	NM_000721.1	4087	gaggatgcataggaacacatgt	138713	544951	see also 457 line			
464	CACNA1E	NM_000721.1	4092	gtgcattaggcaactatgtagatc	138715	544952	see also 457 line			
465	CACNA1E	NM_000721.1	5369	cagcatgtggccgcatccattac	138731	544967	see also 457 line			
466	CACNA1E	NM_000721.1	5370	agcatgtggccgcatccattaca	138732	544968	see also 457 line			
467	CACNA1E	NM_000721.1	5429	cgtagggcctcggcaagatgt	138733	544970	see also 457 line			
468	CACNA1E	NM_000721.1	5546	tccggaagcctctggacattaaa	138734	544972	see also 457 line			
469	CACNA1E	NM_000721.1	6050	tccgggttaagcgttcaaatcc	138741	544983	see also 457 line			
470	CACNA1E	NM_000721.1	6263	ctgatgtctcccgctgaattca	138746	544986	see also 457 line			

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471	CACNA2D 1	NM_000722.1	388	aagcaatgaagtgctactaca	261347	645130	channel	dihydropyridine- sensitive calcium channel	malignant hyperthermia(悪性高体温症)
472	CACNA2D	NM_000722.1	586	ctggacaagtgccttagtagaag	261360	645142	see also 471 line		
473	CACNA2D	NM_000722.1	896	tctgggaatgtagcttctattaa	261376	645158	see also 471 line		
474	CACNA2D	NM_000722.1	1291	aagaatcaatactactcaggaatt	261389	645178	see also 471 line	voltage-gated calcium channel	Lambert-Eaton myasthenic syndrome(Lambert- Eaton筋無力症候群)
475	CACNB2	NM_000724.1	999	atcatctctatagacataatg	261502	644952	channel		
476	CACNB2	NM_000724.1	1274	aaggcggatattccatcaacagg	261507	644957	see also 475 line		
477	CACNB2	NM_000724.1	1448	tggctccttgacgcggatacaatt	261516	644962	see also 475 line		
478	CD3E	NM_000733.1	634	ggccagcgggacccgtattctgg	246051	633536	receptor_activity, kinase_related, signal_transduction gpcr, apoptosis	T-cell factor 1G	leukemia(白血病)、diabetes(糖尿病)
479	CHRM1	NM_000738.2	1650	tgctacgcactctgcacaaagc	178927	623958	gpcr, receptor_activity, signal_transduction kinase_related	muscarinic acetylcholine receptor	-
480	CHRNA7	NM_000746.2	310	atgtcttgacagatcaactatt	179127	572257	channel, receptor_activity, kinase_related, signal_transduction	nicotinic acetylcholine- activated cation- selective channel	rheumatoid arthritis(関節リウマチ)、 schizophrenia(精神分裂病)
481	CYP7A1	NM_000780.2	586	ctgtacccgagtgatgtttgaag	221198	672075	-	steroid hormone receptor	-
482	CYP7A1	NM_000780.2	1224	tagctctttaccacagtaattg	221215	672093	see also 481 line	Retinoic acid receptor RXR-	-
483	CYP24A1	NM_000782.2	1219	tggcctgggacacacatttcaaa	221767	608692	-	-	-
484	CYP26A1	NM_000783.2	1039	gagcaatcaagacacacagttgg	221583	608721	-	-	-
485	CYP26A1	NM_000783.2	1146	tctgggtgctctgaagactttt	221585	608724	see also 484 line	-	-
486	CYP26A1	NM_000783.2	1148	cgggtgctctgaagacttttga	221586	608726	see also 484 line	-	-
487	DBH	NM_000787.2	920	tgggtgccaaggacattttactac	162513	560127	-	dopamine-beta- monooxygenase	congenital orthostatic hypotension(起立性低血 圧症)、alcoholism(アルコール依存症)
488	ACE	NM_000789.2	2678	cagaactggtccaacatctatga	154427	555577	-	-	atherosclerosis(粥状硬化症)、Alzheimer disease(アルツハイマー病)、diabetes(糖尿病)
489	ACE	NM_000789.2	2992	ggcccatcatccagttatttoatgc	154434	555584	see also 488 line	-	-
490	DRD2	NM_000795.2	924	caccgttatcatgaagtctaattg	237892	624109	receptor_activity, gpcr, signal_transduction	-	alcoholism(アルコール依存症)、schizophrenia(精 神分裂病)、Parkinson disease(パーキンソン病)
491	DRD3	NM_000796.2	560	gacaggtgagatctggaatttca	237899	624117	receptor_activity, gpcr, signal_transduction	-	alcoholism(アルコール依存症)、schizophrenia(精 神分裂病)
492	FOLR2	NM_000803.2	521	ctggatgcccattatgcaaga	179656	572969	receptor_activity	receptor	-

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493	GABRA1	NM_000806.3	1607	ttgaatctttaacttagtctac	178341	571601	channel, receptor_activity, signal_transduction	GABA-A receptor	Parkinson disease(パーキンソン病)
494	GABRA1	NM_000806.3	1608	tggaaatctttaacttagtctact	178342	571602	see also 493 line		
495	GABRA3	NM_000808.2	994	cagagataatccggtctagtaca	178405	571671	channel, receptor_activity, signal_transduction	benzodiazepine receptor	-
496	GABRA3	NM_000808.2	996	gagataatccggtctagtacagg	178406	571672	see also 495 line		
497	GABRA3	NM_000808.2	1018	gagaatatgtctcatcacaacc	178407	571674	see also 495 line		
498	GABRA3	NM_000808.2	1570	ctgagaccacgaacctacacagt	178412	571684	see also 495 line		
499	GABRA4	NM_000809.2	320	aacagcgtcgtcctcgattgg	178418	571692	channel, receptor_activity, signal_transduction	benzodiazepine receptor	-
500	GABRA4	NM_000809.2	1671	ctggatctggcacaaagtaaaata	178456	571726	see also 499 line		
501	GABRA4	NM_000809.2	1675	atctggcacaaagtaaaatagaca	178458	571727	see also 499 line		
502	GABRA5	NM_000810.2	1650	cggcactttoaacttagttact	178486	571759	channel, receptor_activity, signal_transduction	GABA-A receptor	alcoholism(アルコール依存症)
503	GABRA6	NM_000811.1	599	accactttactcagtagaagtc	178501	571782	channel, receptor_activity, signal_transduction	benzodiazepine receptor	alcoholism(アルコール依存症)
504	GABRB1	NM_000812.2	290	togatgtgccagcatagacatg	178534	572443	channel, receptor_activity, signal_transduction	GABA-A receptor	-
505	GABRB1	NM_000812.2	789	gtcactaagttttcgtctaaaga	178542	572459	see also 504 line		
506	GABRB1	NM_000812.2	791	cactaagttttcgtctaaaagaga	178543	572460	see also 504 line		
507	GABRB1	NM_000812.2	909	agccagagtcgcactaggaaatca	178545	572464	see also 504 line		
508	GABRB2	NM_000813.1	238	ggggctactttgggatttgctcc	178555	572479	channel, receptor_activity, signal_transduction	-	alcoholism(アルコール依存症)
509	GABRB2	NM_000813.1	295	tggtcaatgaccctagtaaatg	178557	572482	see also 508 line		
510	GABRB2	NM_000813.1	308	tagtaaatgtcgtcgtggttaag	178558	572483	see also 508 line		
511	GABRB3	NM_000814.3	449	ctcaacctcacgcttgacaatcg	178606	572525	channel, receptor_activity, signal_transduction	-	alcoholism(アルコール依存症)
512	GABRG2	NM_000816.2	649	gtggtatgacagacggttgaaat	178720	571925	channel, receptor_activity, signal_transduction	benzodiazepine receptor	alcoholism(アルコール依存症)、schizophrenia(精神分裂病)
513	GABRG2	NM_000816.2	650	tgtgtatgacagacggttgaaatt	178721	571926	see also 512 line		
514	GABRG2	NM_000816.2	1615	ctctatgtcgtcggtctcttcc	178744	571963	see also 512 line		
515	GAD1	NM_000817.1	926	aactatgtcgcgaagacattga	233743	618087	-	-	diabetes(糖尿病)、Parkinson disease(パーキンソン病)、schizophrenia(精神分裂病)
516	GAD2	NM_000818.1	503	atctgtgtgaaaagtttccataga	233776	618132	-	glutamate decarboxylase	diabetes mellitus(糖尿病)、diabetes(糖尿病)、Parkinson disease(パーキンソン病)

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517	GAD2	NM_000818.1	506	tggtgaaaagtttcgatagatca	233777	618133	see also 516 line		
518	GAD2	NM_000818.1	508	gtgaaaagtttcgatagatcaac	233778	618134	see also 516 line		
519	GAD2	NM_000818.1	622	atgcattgccacaacactctaa	233781	618143	see also 516 line		
520	GGCX	NM_000821.2	1423	gcccacagatctactttgatattt	233168	484418	-	ligase	Vitamin K-dependent coagulation defect(ビタミンK依存性血液凝固因子異常)
521	GGCX	NM_000821.2	1880	ctggcatatctgcaagaattaaa	233175	484437	see also 520 line		
522	GLRB	NM_000824.2	1399	ttcagcattgttgaagcttaacc	179372	572682	receptor_activity, signal_transduction	glycine-inhibited chloride channel	-
523	GLRB	NM_000824.2	1409	ttggaagcttaccagaagatttt	179373	572683	see also 522 line		
524	GRIA2	NM_000826.1	617	gacagtgacagagcgttatcaac	244269	632173	receptor_activity, channel,	potassium channel	-
525	GRIA2	NM_000826.1	2590	gagcaacgttctgtgagattct	244305	632213	see also 524 line		
526	GRIA2	NM_000826.1	2677	aagggccgagcgaaacgaaga	244306	632215	see also 524 line		
527	GRIA2	NM_000826.1	2680	ggccgagcgaaacgaatgaagg	244307	632216	see also 524 line		
528	GRIA1	NM_000827.2	2405	tgcoctgagaaatccagtaaac	244250	632157	receptor_activity, channel,	potassium channel	-
529	GRIA3	NM_000828.2	291	ggggcgtttggagtcattctcaog	244311	622076	signal_transduction		-
530	GRIA3	NM_000828.2	338	taggtggacttttctatgagaaac	244312	622078	see also 529 line		
531	GRIA3	NM_000828.2	896	aagtcgaaagatttaacacatt	244324	622090	see also 529 line		
532	GRIA3	NM_000828.2	1126	aagaatgcaccactaaagataac	244334	622094	see also 529 line		
533	GRIA3	NM_000828.2	1358	gacgtagaaacaaattataccatc	244337	622101	see also 529 line		
534	GRIA3	NM_000828.2	1359	acgtaggaacaaattataccatcg	244338	622102	see also 529 line		
535	GRIA3	NM_000828.2	2808	cacaaagaaacacccaaacttta	244358	622138	see also 529 line		
536	GRIA4	NM_000829.1	247	ttctgttccagttattctagagg	244618	632236	receptor_activity, channel,	potassium channel	-
537	GRIA4	NM_000829.1	826	atggtatcgttggaagaaactaga	244638	632257	see also 536 line		
538	GRIA4	NM_000829.1	2272	acgcccaagggttctcttaag	244673	632282	see also 536 line		
539	GRIA4	NM_000829.1	2675	caggattggtctgtcattgcacgc	244674	632291	see also 536 line		
540	GRIK1	NM_000830.2	634	caccacattaacctatgacatcc	244369	632292	receptor_activity, channel,		schizophrenia(精神分裂病)
541	GRIK1	NM_000830.2	1944	ggagtggaacggagatgggttaa	244407	632325	see also 540 line		
542	GRIK1	NM_000830.2	2209	tacacctacagtggtgataaac	244417	632328	see also 540 line		
543	GRIK1	NM_000830.2	2669	gagtcaccacgattgattgt	244423	632334	see also 540 line		
544	GRIN2A	NM_000833.2	2925	atggagtcacattgaagaaag	165897	563328	receptor_activity, channel,	magnesium binding	-
545	GRIN2A	NM_000833.2	4456	ccctcggacccttacaacact	165916	563374	see also 544 line		

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[illegible]



573	IL7	NM_000880.2	846	tccgtgctcctcgaagttgagg	167530	564610	-	interleukin-7 receptor ligand	-
574	IMPDH1	NM_000883.2	1359	caccogtgagagtgacaaatacc	220399	607727	-	-	-
575	IMPDH1	NM_000883.2	2085	gaccatgtcggcccgagattgagg	220409	607742	see also 574 line	receptor activity, signal transduction	-
576	ITGA4	NM_000885.2	4194	tacaatctatctcacagaaga	249139	635660	receptor activity, signal transduction	cell adhesion receptor	-
577	ITGA4	NM_000885.2	4199	atctatctcacagaagaagaaca	249140	635661	see also 576 line	cell adhesion receptor	-
578	ITGB6	NM_000888.3	595	tgccaaaccttgacagtagtattc	249477	636098	receptor activity, signal transduction	cell adhesion receptor	-
579	ITGB6	NM_000888.3	2130	ctccaaacattcccatgatcatg	249511	636137	see also 578 line	-	-
580	ITGB6	NM_000888.3	2273	aagtggcaaacgggaaccaatcc	249517	636140	see also 578 line	-	-
581	KCNJ5	NM_000890.3	1326	acctggaaagaggcttctatga	260595	644201	channel, gpor	G-protein enhanced inward rectifier potassium	-
582	LTA4H	NM_000895.1	1001	ttgggatcactttttgttaaatg	157520	558128	-	zinc binding	-
583	MAOB	NM_000898.3	322	accaaccaggaatcgtatcttga	225859	612498	-	electron	Parkinson disease(パーキンソン病)
584	KITLG	NM_000899.1	456	ttctgaagccttgagtaattatt	168209	565204	signal transduction	-	-
585	KITLG	NM_000899.1	911	gtctacaaggcagtgaaat	168220	565223	see also 584 line	-	-
586	MME	NM_000902.2	2300	ctgccgcgaagaattcatacatga	158064	558608	-	-	leukemia(白血病), Alzheimer disease(アルツハイ マー病)
587	MME	NM_000902.2	2302	gccgcgaagaattcatacatgaat	158065	558609	see also 586 line	-	-
588	NPR2	NM_000907.1	467	tacacgggcaacttcaattggact	94941	510470	kinase related, receptor activity, gpor, signal transduction	-	-
589	NPR2	NM_000907.1	900	accocaaatcctgagatcacagg	94945	510477	see also 588 line	-	-
590	NPR2	NM_000907.1	1330	gacgaccatcctgtgataaac	94951	510485	see also 588 line	-	-
591	NPR2	NM_000907.1	2404	ctgctgcgcagtggaacagtgatgc	94974	510514	see also 588 line	-	-
592	NPY2R	NM_000910.2	736	atgcgcacagtaaccaacttttt	176060	571265	receptor activity, gpor, signal transduction	neuropeptide Y receptor	-
593	P4HA1	NM_000917.1	833	cagagagctaattgtaacttaaa	222271	609018	-	procollagen- proline, 2-oxoglutarate-4- dioxygenase	-
594	P4HA1	NM_000917.1	1674	aacgtggacaagaatttgaaga	222303	609051	see also 593 line	-	-
595	PAM	NM_000919.2	963	ctggcatgtacctatgatgtct	163786	560977	-	-	-
596	PAM	NM_000919.2	1573	aagggaagatgttttcatgtgc	163804	560993	see also 595 line	-	-
597	PC	NM_000920.2	1148	ggcagggcaagcaactacttcatc	95826	511462	-	-	Leigh necrotizing encephalopathy(リー・ニキニシ脳)
598	PC	NM_000920.2	2300	tggaggctgcccactctcatcacg	95835	511475	see also 597 line	-	-
599	PDE3A	NM_000921.2	2112	aagaaaatgtggcgtattcttta	198054	590063	signal transduction	cGMP-inhibited cyclic-nucleotide phosphodiesterase	-
600	PDE3A	NM_000921.2	2363	cagattctgacagtgattttaca	198067	590069	see also 599 line	-	-

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601	PDE3A	NM_000921.2	2367	ttctgacagtgagattacacatg	198068	590070	see also 599 line				
602	PDHB	NM_000925.1	770	aagctgcagcagtgctctctataa	225397	771138	-		pyruvate dehydrogenase (lipoamide)	-	
603	PGR	NM_000926.2	2826	ctggagtgcatctctgtacaagc	9185	447696	transcription_regulat or, receptor activity, -		steroid hormone receptor	-	
604	ABCB1	NM_000927.2	2536	aactgaatggccattttgttg	69493	491830	-		Smad3/Sp-1 heterodimer	-	colchicin sensitivity(コルシチン過敏症)、multiple drug resistance(多剤耐性)
605	ABCB1	NM_000927.2	3056	ttgtctggacaagcactgaaaga	69504	491841	see also 604 line		-	-	
606	PLCB4	NM_000933.2	489	atccagaaagtaactaagcaatgg	198348	590572	-		-	-	
607	PLCB4	NM_000933.2	787	tcctcggacagatagagatgc	198358	590582	see also 606 line		-	-	
608	PLCB4	NM_000933.2	791	cggacagatataagagatctttt	198360	590583	see also 606 line		-	-	
609	PLCB4	NM_000933.2	1372	cagcaaatatcaacagtaacaaga	198376	590598	see also 606 line		-	-	
610	PLCB4	NM_000933.2	1421	ggagatctctgttgaacaagc	198379	590603	see also 606 line		-	-	
611	PLCB4	NM_000933.2	2094	cccgatgtagcgatgcaattg	198402	590627	see also 606 line		-	-	
612	PLCB4	NM_000933.2	2097	cagatttagcgatgcaattgaat	198404	590628	see also 606 line		-	-	
613	PLCB4	NM_000933.2	2568	taccaacaattttctgcaatatt	198425	590647	see also 606 line		-	-	
614	PLCB4	NM_000933.2	2702	ggcattgaaactagtgcacatagc	198431	590653	see also 606 line		-	-	
615	PLOD2	NM_000935.1	1423	ggagatgaatgaaggaaactattt	222200	609535	-		-	-	
616	POLR2B	NM_000938.1	197	cagatgtctgttcaagaattgt	36277	464642	transcription_regulat or		DNA-directed RNA polymerase III	-	
617	POLR2B	NM_000938.1	727	ttccggaccaccagctactatat	36292	464663	see also 616 line		-	-	
618	POLR2B	NM_000938.1	728	tcocgaccaccagctactatatg	36293	464664	see also 616 line		-	-	
619	POLR2B	NM_000938.1	739	cagctactatagggttagctatgc	36294	464666	see also 616 line		-	-	
620	POLR2B	NM_000938.1	1725	ttgctgatgcaaccagaattttt	36333	464698	see also 616 line		-	-	
621	POLR2B	NM_000938.1	1726	tgctgatgcaaccagaattttt	36334	464699	see also 616 line		-	-	
622	POLR2B	NM_000938.1	1890	cagatgcaggccgctattttaga	36341	464713	see also 616 line		-	-	
623	POLR2B	NM_000938.1	2320	gactacacggctctatggaatgc	36355	464730	see also 616 line		-	-	
624	POLR2B	NM_000938.1	2323	tacacggctctatggaatctac	36356	464731	see also 616 line		-	-	
625	PPP3R1	NM_000945.2	675	tcgctatctatgacatggataaa	121131	552665	phosphatase		calmodulin inhibitor	-	
626	PRIM1	NM_000946.1	149	caocgtgaattttcattcact	208653	598403	-		DNA primase	-	osteosarcoma(骨髄性骨肉腫)
627	PRIM1	NM_000946.1	258	ttgatataggcgagctattct	208656	598408	see also 626 line		-	-	
628	PRIM1	NM_000946.1	281	caagacccaatcaacacaatc	208657	598410	see also 626 line		-	-	
629	PRIM2A	NM_000947.1	1105	aagtttgataaaggctactctta	36952	464989	-		DNA primase	-	
630	PRIM2A	NM_000947.1	1154	aaggcaaggaggacagactatca	36953	464992	see also 629 line		-	-	
631	RRM1	NM_001033.2	1488	acctgggaaccatcaaatgcagc	226191	612911	-		ribonucleoside-diphosphate reductase	-	
632	RRM2	NM_001034.1	442	tcccatcgagtgaccatgatc	226228	612952	-		ribonucleoside-diphosphate reductase	-	
633	RRM2	NM_001034.1	443	ccccatcgagtgaccatgatct	226229	612953	see also 632 line		-	-	

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									receptor activity, channel, signal transduction	receptor	ventricular tachycardia(心室頻拍症), arrhythmic right ventricular dysplasia(不整 脈起性右耳右形成不全症)
634	RYR2	NM_001035.1	2833	tggctcgggttagatgacacaa	122407	553142					
635	RYR2	NM_001035.1	4440	atgtctgggtggcgtgattaca	122450	553175		see also 634 line			
636	RYR2	NM_001035.1	4442	gtgtgggtggcgtgattacac	122451	553176		see also 634 line			
637	RYR2	NM_001035.1	13550	gagtcagcattctggagaacaa	122655	553343		see also 634 line			
638	RYR2	NM_001035.1	13885	tggatactactgcttgaagtc	122670	553349		see also 634 line			
639	SCN1B	NM_001037.2	429	caacagcgtgctcaagaagatcc	262232	647174		channel	voltage-gated sodium channel	epilepsy(てんかん)	
640	SLC6A3	NM_001044.2	1732	tggctggtgcagcattggaac	256035	640137			dopamine:sodium symporter	alcoholism(アルコール依存症)	
641	SLC12A2	NM_001046.2	1019	tggctggtgcagcattggaac	256092	640584					
642	SLC12A2	NM_001046.2	1022	ctgagtcagcgtgatttagtac	256093	640586		see also 641 line			
643	SLC12A2	NM_001046.2	2079	cagatgttgctaaaggttagg	256724	640629		see also 641 line			
644	SLC12A2	NM_001046.2	2273	atgctgctcgtcattcaataact	256737	640643		see also 641 line			
645	SLC12A2	NM_001046.2	2275	ggcgtcgtcattcaataactac	256738	640644		see also 641 line			
646	SLC12A2	NM_001046.2	2276	gcgtcgtcattcaataactaca	256739	640645		see also 641 line			
647	SLC12A2	NM_001046.2	2853	atgagcattggtatgtatgat	256755	640669		see also 641 line			
648	SULT1C1	NM_001056.2	829	ttccttatgtagctcgaaatgc	217775	605789					
649	TACR2	NM_001057.1	439	agcaaccaaggcgttattgctgg	175980	629182		gpcr, receptor activity, signal transduction	tachykinin receptor		
650	TACR1	NM_001058.2	938	agcgcaagggtgctcaaaatgatg	175975	629175		gpcr, signal transduction			
651	TBXAS1	NM_001061.2	928	atcatttccatccataatggtcc	222083	609394				thromboxane synthetase deficiency(トロンボキサ ン合成酵素欠損症)	
652	TKT	NM_001064.1	431	aggccagctaccaggtctattgc	153885	554577			transketolase	Wernicke-Korsakoff syndrome(ウェルニッケ・コ ルサコフ症候群)	
653	TOP2A	NM_001067.2	320	atgaagatgttgccattactat	42514	469461			DNA topoisomerase	colorectal cancer(大腸癌), esophageal cancer(食道癌), lung cancer(肺癌), small cell lung cancer(肺癌), colorectal cancers(結腸直腸	
654	TOP2A	NM_001067.2	1279	cccaagagcttgatgaacacatg	42546	469484		see also 653 line			
655	TOP2A	NM_001067.2	2102	atgatcgaaggaatggtaact	42567	469510		see also 653 line	DNA topoisomerase		
656	TOP2B	NM_001068.2	417	aggcattccagtagtagaacaca	42659	469590					
657	TOP2B	NM_001068.2	1050	tggtaaacctgattgaagtagta	42679	469619		see also 656 line			
658	TOP2B	NM_001068.2	1055	aactgattgaagtagtaagaaa	42680	469620		see also 656 line			
659	TOP2B	NM_001068.2	1088	ctggtgatcagtagaacattt	42681	469621		see also 656 line			
660	TOP2B	NM_001068.2	1252	gccttaattgtggcattgtaga	42684	469623		see also 656 line			
661	TOP2B	NM_001068.2	1254	ctctaattgtgcatgtagaaa	42685	469624		see also 656 line			
662	TOP2B	NM_001068.2	1995	taccttagcatttagtaagaaga	42704	469653		see also 656 line			
663	TOP2B	NM_001068.2	2242	acctgtttcaaggaatgataa	42710	469671		see also 656 line			
664	TOP2B	NM_001068.2	2248	ttcaaggaaggaatgataaacgtga	42712	469672		see also 656 line			

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665	TOP2B	NM_001068.2	2447	ctgcaagccctcgttatatttc	42718	489674	see also 656 line		
666	TOP2B	NM_001068.2	3174	agcagaatctacaagcttaaca	42739	489706	see also 656 line		
667	TOP2B	NM_001068.2	3200	aagccggtttcattttagagaag	42741	489709	see also 656 line		
668	TOP2B	NM_001068.2	3274	atgttagtcagagagaggtatga	42742	489713	see also 656 line		
669	TOP2B	NM_001068.2	4179	agcatctccatacaaatgatg	42764	489737	see also 656 line		
670	TOP2B	NM_001068.2	4604	aagccgaggggcaagaaagg	42769	489749	see also 656 line		
671	TOP2B	NM_001068.2	4785	cggctcgggctaggaaagaagtaa	42772	489752	see also 656 line		
672	VCAM1	NM_001078.2	695	ttctgttttcgagctaaatta	318025	682717	-		atherosclerosis(粥状硬化症)
673	VCAM1	NM_001078.2	702	ttgcgagctaaattacacattg	318026	682718	see also 672 line		
674	VCAM1	NM_001078.2	703	tgccgagctaaattacacattga	318027	682719	see also 672 line		
675	VCAM1	NM_001078.2	705	ccgagctaaattacacattgatg	318028	682720	see also 672 line		
676	VCAM1	NM_001078.2	2141	ttggctcaaatgaagattta	318062	682756	see also 672 line		
677	PDE5A	NM_001083.2	2193	atcatggaacaccattttga	111263	520831	signal transduction	-	
678	PDE5A	NM_001083.2	2321	tacagacttagcactgtacatta	111266	520836	see also 677 line		
679	PDE5A	NM_001083.2	2323	cagacctagcactgtacattag	111267	520837	see also 677 line		
680	PDE5A	NM_001083.2	2326	acctagcactgtacattgaagg	111268	520838	see also 677 line		
681	PDE5A	NM_001083.2	2601	atgcaagttgggttcattgatgc	111277	520848	see also 677 line		
682	ACLY	NM_001096.2	1357	tgagatcccatccatgctcttg	71584	493200	-	Sterol regulatory element binding proteins	-
683	ACLY	NM_001096.2	1358	gggaccccatccatgctcttg	71585	493201	see also 682 line		
684	ACLY	NM_001096.2	1770	accacaagcagaagttttactgg	71590	493205	see also 682 line		
685	ACPP	NM_001099.2	929	tacagatggcgctagattgttac	195118	589348	phosphatase, cell cycle	protein tyrosine phosphatase	prostate cancer(前立腺癌)
686	ACVR1	NM_001105.2	621	gccaaaggagactggtgaacagg	71606	493238	receptor activity, signal transduction, kinase related	transforming growth factor-beta receptor	-
687	ACVR2B	NM_001106.2	232	ctgctggctagatgacttcaact	71740	493335	receptor activity, signal transduction, kinase related	transforming growth factor-beta receptor	-
688	ADAM10	NM_001110.1	753	ttgattatgataacctctcatatt	154556	555676	kinase related	-	-
689	ADAM10	NM_001110.1	1281	tggtgaacgcataagaatcaat	154575	555692	see also 688 line		
690	ADAM10	NM_001110.1	1287	aacgataaagaatcaatacaact	154576	555694	see also 688 line		
691	ADAM10	NM_001110.1	1718	atgtatgcaagagcaacatctgg	154593	555701	see also 688 line		
692	ADAM10	NM_001110.1	1738	tgaggacaacttaacaacaata	154594	555705	see also 688 line		
693	ADAM10	NM_001110.1	2393	ttcatcgctgcagattagtaga	154611	555716	see also 688 line		
694	ADAM10	NM_001110.1	2396	atgaggctgcagattagtagatgc	154612	555717	see also 688 line		
695	ADAR	NM_001111.2	2938	aggcttoatcaggtttctctaca	48089	471673	-	-	dyschromatosis symmetrica hereditaria(遺伝性対称性色素異常症)
696	ADAR	NM_001111.2	3407	gggcatctgacccgtgctattg	48102	471683	see also 695 line		
697	ADCY7	NM_001114.1	2920	gccggacttcaaggtgtctaca	164984	562798	-	guanylate cyclase	alcoholism(アルコール依存症)、Alzheimer disease(アルツハイマー病)
698	ADCY8	NM_001115.1	3318	tcgctatgagaacgctcagattc	165005	562832	-	guanylate cyclase	-
699	ADCY8	NM_001115.1	4079	ctgggctctgaggaaataacaag	165017	562859	see also 698 line		

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700	ADCY8	NM_001115.1	4192	ctgagcagcagaagtattctcaaat	165021	562864	see also 698 line		
701	ADCY8	NM_001115.1	4245	ctgtgcaattatctgtcttctat	165023	562868	see also 698 line		
702	ADCY8	NM_001115.1	4557	ttctcagctgtgtttcacagata	165033	562878	see also 698 line		
703	ADCY8	NM_001115.1	4558	tcctcagctgtgtttcacagatat	165034	562879	see also 698 line		
704	ADCY9	NM_001116.1	1866	tggcgagcagctgcaaaaccttt	165073	562940	signal_transduction	peptidyl-prolyl cis-trans isomerase	-
705	ADCY9	NM_001116.1	1867	ggcgagcagctgcaaaacctttg	165074	562941	see also 704 line		
706	ADCY9	NM_001116.1	2733	tcgtgcaactactgtaactctgc	165090	562956	see also 704 line		
707	ADD1	NM_001119.3	673	ctcagcttctacacatcatc	115165	526444	-	-	-
708	ADD1	NM_001119.3	786	atcaatctacaaggagatatagt	115171	526448	see also 707 line		
709	ADD1	NM_001119.3	1131	ttctattacatccataaccttgt	115181	526456	see also 707 line		
710	ADD1	NM_001119.3	1358	aactggctaccccttatcgatacc	115183	526458	see also 707 line		
711	ADD1	NM_001119.3	1590	tcgaagactaagtggactaaaga	115186	526467	see also 707 line		
712	ADK	NM_001123.2	448	tggatcattggagtagataaat	165108	598761	kinase_related	-	-
713	ADK	NM_001123.2	884	gagcaagccttgagactaaaga	165126	598778	see also 712 line		
714	ADSS	NM_001126.2	1337	atgctcatatgatcaatggattt	108151	518587	-	adenylosuccinate synthase	-
715	APIB1	NM_001127.2	1085	gtggccctgcgcacatcaatct	267381	650284	-	-	meningioma(メニンジオーマ)
716	APIB1	NM_001127.2	1089	ccctgcgaacatcaatctctc	267382	650286	see also 715 line		
717	APIB1	NM_001127.2	1740	tgcggaccgtggctacatctac	267385	650291	see also 715 line		
718	APIB1	NM_001127.2	1741	gcgggaccgtggctacatctact	267386	650292	see also 715 line		
719	APIG1	NM_001128.4	555	gacaaacgattggctatttagg	267397	650314	-	protein transporter	-
720	APIG1	NM_001128.4	616	ttctcagcaccactgtatcaag	267400	650316	see also 719 line		
721	APIG1	NM_001128.4	1063	tacgaatttgcgttatttaaga	267414	650330	see also 719 line		
722	APIG1	NM_001128.4	1074	cggttataagaatttaggaag	267415	650332	see also 719 line		
723	APIG1	NM_001128.4	1599	ttgacaacggcaggaagtattgt	267433	650355	see also 719 line		
724	APIG1	NM_001128.4	1601	gacaacggcaggaagtattgttc	267434	650356	see also 719 line		
725	APIG1	NM_001128.4	2649	gggacatcacacacagtcattaa	267463	650385	see also 719 line		
726	ALOX12B	NM_001139.1	805	gggattcccaattctcatcaact	164359	562122	-	lipoxigenase	-
727	ANGPT1	NM_001146.3	561	aagatataaccggattccaactg	171038	679381	signal_transduction	-	Alzheimer disease(アルツハイマー病)
728	ANGPT1	NM_001146.3	581	atgggcaatgtgctacacttctc	171039	679382	see also 727 line		
729	ANGPT1	NM_001146.3	1910	ggccagttactctcttaagtctc	171068	679421	see also 727 line		
730	ANK2	NM_001148.2	2862	gggcactgagaacttagacaacg	286599	682378	signal_transduction	-	long QT syndrome(QT延長症候群)
731	ANK2	NM_001148.2	2876	tagacaacgtggctcttcttctt	286600	682379	see also 730 line		
732	ANK2	NM_001148.2	4334	tggtcatacagctatttgaac	286639	682418	see also 730 line		
733	ANXA6	NM_001155.2	2080	tcggagggaattcattgagaaa	138007	544176	-	-	-
734	APAF1	NM_001160.2	1182	ccagagcttccacttaatt	72108	493852	apoptosis	-	melanoma(メラノーマ)
735	APAF1	NM_001160.2	1184	cagagcttccacttaatttga	72109	493853	see also 734 line		
736	APAF1	NM_001160.2	1186	gagggttccacttaatttgaag	72110	493854	see also 734 line		
737	APAF1	NM_001160.2	1343	aagaggtttacagattcagtaat	72114	493859	see also 734 line		
738	APAF1	NM_001160.2	1345	gagtggtacagattcagtaattg	72115	493860	see also 734 line		
739	APAF1	NM_001160.2	2208	ttgagacagagccatttcttaac	72146	493879	see also 734 line		
740	APAF1	NM_001160.2	4046	cagaccttctacacaaatggaac	72208	493917	see also 734 line		

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741	NUDT2	NM_001161.3	369	gagcatgtggttgcattcatcttc	192231	717104	phosphatase, apoptosis	-	-
742	APBA1	NM_001163.2	1541	ttcccaacctacgttggaagttcc	267862	680106	-	protein transporter	Alzheimer disease(アルツハイマー病)
743	BIRC2	NM_001166.2	2186	gagttgttgatgagatcaagg	311123	676776	apoptosis, signal_transduction, kinase_related	apoptosis inhibitor	-
744	ARHGAP5	NM_001173.1	823	atgatacaactaaatttgtaatt	192519	518704	signal_transduction	-	-
745	ARHGAP5	NM_001173.1	1166	aacttggaaaacttgtagtaata	192529	518718	see also 744 line	-	-
746	ARHGAP5	NM_001173.1	1221	atcaacttagagggacacagaaa	192531	518720	see also 744 line	-	-
747	ARHGAP5	NM_001173.1	2504	tggtacatatctctgtaaat	192566	518768	see also 744 line	-	-
748	ARHGAP5	NM_001173.1	2562	ttggaatcagttaaacacaaattt	192569	518772	see also 744 line	-	-
749	ARHGAP5	NM_001173.1	2627	agctgacttgagaattgtcatgt	192572	518776	see also 744 line	-	-
750	ARHGAP5	NM_001173.1	2722	ctgtctcaagctggacagaataat	192576	518777	see also 744 line	-	-
751	ARHGAP5	NM_001173.1	2723	tgctcaagctggacagaataat	192577	518778	see also 744 line	-	-
752	ARHGAP5	NM_001173.1	2781	aggcgaatacagatcacaaatt	192579	518782	see also 744 line	-	-
753	ARHGAP5	NM_001173.1	2782	ggcgaatacagatcacaaatt	192580	518783	see also 744 line	-	-
754	ARHGAP5	NM_001173.1	3408	gtctctcacacttaaacctaa	192592	518808	see also 744 line	-	-
755	ARHGAP5	NM_001173.1	3409	tgctctcacacttaaacctaa	192593	518809	see also 744 line	-	-
756	ARHGAP5	NM_001173.1	3410	gcctctcacacttaaacctaaac	192594	518810	see also 744 line	-	-
757	ARHGAP5	NM_001173.1	3425	acctaaaccagttgtacctaaga	192595	518811	see also 744 line	-	-
758	ARHGAP5	NM_001173.1	3603	aagggtctattctgagagattta	192599	518816	see also 744 line	-	-
759	ARHGAP5	NM_001173.1	3781	tagtaagccaaagtcatatcata	192611	518824	see also 744 line	-	-
760	ARHGAP5	NM_001173.1	4426	atctgttaaacattgatgtatttc	192629	518844	see also 744 line	-	-
761	ARHGAP5	NM_001173.1	4429	ctgttaaacattgatgtatttcga	192630	518845	see also 744 line	-	-
762	ARHGAP5	NM_001173.1	4510	cagacaacttaccatctgtttt	192636	518851	see also 744 line	-	-
763	ARHGAP5	NM_001173.1	4780	cggatctctgtgtattataga	192645	518862	see also 744 line	-	-
764	ARHGAP6	NM_001174.2	3049	cggagacatctcccttatgaca	252534	665231	signal_transduction	-	-
765	ARHGAP6	NM_001174.2	3051	gagacatctcccttatgacaac	252535	665232	see also 764 line	-	-
766	ARHGAP6	NM_001174.2	3264	ggggaacttggaattcaacatta	252549	665235	see also 764 line	-	-
767	ARNTL	NM_001178.2	535	gacctcatggaaggtagaata	981	441789	transcription_regulat	transcription factor	-
768	ARNTL	NM_001178.2	536	acctcatggaaggtagaataat	982	441790	see also 767 line	-	-
769	ARNTL	NM_001178.2	537	ccctcatggaaggtagaataata	983	441791	see also 767 line	-	-
770	ARNTL	NM_001178.2	1620	gagtcgatggttcagtttcata	1016	441817	see also 767 line	-	-
771	BAPX1	NM_001189.2	41	tccaggagatcctcaacaagaaa	1363	442040	transcription_regulat	RNA polymerase II	-
772	BCL2L1	NM_001191.2	430	tacagctggagtcagtttagta	311005	676924	apoptosis	transcription factor	-
773	BCL2L1	NM_001191.2	432	cagctggagtcagtttagtagt	311006	676925	see also 772 line	-	leukemia(白血病)
774	PRDM1	NM_001198.2	767	acgggatgaacatctactctac	9804	464901	transcription_regulat	-	-
775	PRDM1	NM_001198.2	768	cgggatgaacatctactctaca	9805	464902	see also 774 line	-	-
776	PRDM1	NM_001198.2	807	tgccaaccaggaactcttctgt	9806	464903	see also 774 line	-	-
777	PRDM1	NM_001198.2	2025	cagtgaggagacggcctttcaaat	9840	464931	see also 774 line	-	-
778	PRDM1	NM_001198.2	2135	aggtctgccaacaagagatttagc	9843	464933	see also 774 line	-	-

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779	BMP1	NM_001199.1	1619	ctctgacgggtccattaaacag	138155	544499	-	-	amyloidosis(アミロイドーシス)
780	BMP2	NM_001200.1	1064	caggctttgcacaaatgaac	168349	565363	-	growth factor	-
781	BMP2	NM_001200.1	1084	aacacagctggtcacagataagg	168350	565364	see also 780 line	-	-
782	BMP4	NM_001202.2	492	ccgagctgctggtgctgtttat	168392	565371	-	-	-
783	BMP4	NM_001202.2	496	atgctgagctgctgtttattatg	168393	565372	see also 782 line	-	-
784	BMP4	NM_001202.2	534	aggcgccgagctgctgttttga	168395	565373	see also 782 line	-	-
785	BMP4	NM_001202.2	995	ggagcttcaccgctataaacatt	168403	565380	see also 782 line	-	-
786	BMP4	NM_001202.2	996	gggcttcaccgctataaacattt	168404	565381	see also 782 line	-	-
787	BMP4	NM_001202.2	997	ggcttcaccgctataaacattta	168405	565382	see also 782 line	-	-
							receptor activity、		primary pulmonary hypertension(原発性肺高血
							kinase related、		圧)
788	BMPR2	NM_001204.4	1269	gagcgtccagttgctgtaaaagt	74173	496235	signal transduction	-	-
789	BMPR2	NM_001204.4	1555	taccacgagagatcattataaa	74188	496245	see also 788 line	-	-
790	BMPR2	NM_001204.4	2179	atgaacgcaacctgtcacataat	74204	496256	see also 788 line	-	-
791	BMPR2	NM_001204.4	2182	aaccagacctgtcacataatagg	74205	496257	see also 788 line	-	-
792	BMPR2	NM_001204.4	3318	agcaatccatgttcagaaacaga	74236	496289	see also 788 line	-	-
793	BMPR2	NM_001204.4	3420	ctggatcttcagccacaaatgt	74239	496291	see also 788 line	-	-
794	CTBP	NM_001212.3	787	gaccacctaatggatttcttgc	313362	687499	-	-	-
795	CALU	NM_001219.2	455	tgcacactacggctacgttttag	138965	545195	-	calcium ion binding	-
796	CALU	NM_001219.2	456	gccacctacggctacgttttaga	138966	545196	see also 795 line	-	-
797	CALU	NM_001219.2	458	cacctacggctacgttttagatg	138967	545197	see also 795 line	-	-
798	CALU	NM_001219.2	459	acctacggctacgttttagatga	138968	545198	see also 795 line	-	-
799	CALU	NM_001219.2	462	tacggctacgttttagatgaccc	138969	545199	see also 795 line	-	-
							kinase related、		schizophrenia(精神分裂病)
800	CAMK2B	NM_001220.3	1362	cccggtggaacgggattaagaggt	74991	497003	signal transduction	-	-
801	CAMK2D	NM_001221.2	978	tggcttagccatagaagttaag	75005	497015	kinase related	-	-
802	CAMK2D	NM_001221.2	1061	tacgtaagatccttaggaag	75008	497019	see also 801 line	-	-
							kinase related、		
							phosphatase、		
803	CAMK2G	NM_001222.2	379	acctcgtgttgacctgttacc	75033	497038	signal transduction	-	-
804	CAMK2G	NM_001222.2	643	ctggcaccgccaggttactgtcc	75039	497046	see also 803 line	-	-
							apoptosis、		
							signal transduction		
805	CASP1	NM_001223.2	401	ggcagagatttatccaataatgg	187324	581022	、kinase related	-	-
806	CASP6	NM_001226.2	306	caggtttcagatctagatttg	187440	581174	apoptosis	-	Alzheimer disease(アルツハイマー病)
807	CASP8	NM_001228.2	995	agcaaacctcgggatactgtct	187514	581222	apoptosis、	-	neuroblastoma(神経芽細胞腫)、caspase 8
808	CASP8	NM_001228.2	1005	gggatactgtctgatatcaaac	187516	581223	kinase related	-	deficiency(カスパーゼ欠損症)
							see also 807 line		
							cell cycle、	Transcription	
809	CCNA2	NM_001237.2	690	acctaaagtgggttacatgaaga	306565	673594	kinase related	factor E2F4	-
810	CCNE1	NM_001238.1	1139	atcagtgttcgacatagagaac	307298	674473	cell cycle	-	bladder cancer(膀胱癌)
							transcription regulat	cyclin-dependent	
							or, kinase related	protein kinase、	
811	CCNT1	NM_001240.2	523	atcgattctacatgattcagtc	300273	668722	regulator	-	-

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812	CDC27	NM_001256.2	345	tacctgttgcaaaatgttgt	307763	675223	-	-	-	
813	CDC27	NM_001256.2	541	accaaagagccttagttaaat	307768	675230	see also 812 line			
814	CDC27	NM_001256.2	610	agccagatcctgacaaacattt	307770	675234	see also 812 line			
815	CDC27	NM_001256.2	611	gcacagatcctgacaaacattt	307771	675235	see also 812 line			
816	CDC27	NM_001256.2	911	accaaaacttggtgcaagtatt	307785	675256	see also 812 line			
817	CDC27	NM_001256.2	1006	gagatggatcctattacaac	307790	675259	see also 812 line			
818	CDH13	NM_001257.2	1190	atgatcaactcaccacaaattcacc	139531	545556	-	calcium ion binding	breast cancer(乳癌)、lung cancer(肺癌)、non-small-cell lung cancer(非小細胞肺癌)	
819	CDK6	NM_001259.2	420	atcaagacttgaccacttacttg	76173	497794	kinase_related, cell_cycle	protein serine/threonine kinase	-	
820	CDK6	NM_001259.2	608	ggccttgccgcctatagttt	76180	497798	see also 819 line			
821	CDK6	NM_001259.2	609	gccttgccgcctatagttt	76181	497799	see also 819 line			
822	CDKN2C	NM_001262.2	1260	ggggggaccctagagcaacttact	294098	674758	kinase_related, cell_cycle	-	dysplastic nevus syndrome(デイスラスチック・ニーマス症候群)	
823	CDKN2C	NM_001262.2	1262	ggggaccctagagcaacttactag	294099	674759	see also 822 line			
824	CDKN2C	NM_001262.2	1265	gacctagagcaacttactagttt	294100	674761	see also 822 line			
825	CDKN2C	NM_001262.2	1266	acctagagcaacttactagttg	294101	674762	see also 822 line			
826	CDKN2C	NM_001262.2	1336	tgcctgcaagttatgaacttg	294104	674767	see also 822 line			
827	CDS1	NM_001263.2	1176	gtcatccaaatctgttggaagg	165228	598556	signal_transduction	phosphatidate	-	
828	CHG1L	NM_001268.2	1163	tggctacgacacacacattagtt	129941	533680	-	cytidyltransferase	-	
829	CHG1L	NM_001268.2	1167	tacacacacacattagttataac	129943	533681	see also 828 line			
830	CHG1L	NM_001268.2	1920	aacctatgctagttagtaacaca	129962	533697	see also 828 line			
831	CHG1	NM_001269.2	289	gtcaccacaagcgcgatgctaaaa	24332	748887	cell_cycle	guanyl-nucleotide release factor	-	
832	CHD1	NM_001270.1	1904	accacacgggttaaaatttaatat	18113	450615	transcription_regulator	chromatin binding	-	
833	CHD1	NM_001270.1	2460	accacacagataataatgaattc	18140	450628	see also 832 line			
834	CHD1	NM_001270.1	2492	caggagccttacacacacttaatt	18141	450630	see also 832 line			
835	CHD1	NM_001270.1	2493	aggagccttacacacacttaatt	18142	450631	see also 832 line			
836	CHD1	NM_001270.1	3559	gcgggttatcaagagctataaga	18176	450665	see also 832 line			
837	CHD1	NM_001270.1	3569	aagagctataagaatttggttg	18177	450666	see also 832 line			
838	CHD4	NM_001273.1	4170	gacacacagtcgcttactcagt	2213	442692	transcription_regulator	zinc binding	rheumatoid arthritis(関節リウマチ)	
839	CHD4	NM_001273.1	4257	aagagcctgcgggaatgataaaga	2214	442694	see also 838 line			
840	CHEK1	NM_001274.2	223	aagttcaactctgtgtaataaga	76833	498139	kinase_related, cell_cycle, signal_transduction	protein serine/threonine kinase	-	
841	CHEK1	NM_001274.2	735	tcctgtggaatagcttactctgc	76852	498164	see also 840 line			
842	CHK	NM_001277.1	923	ttgtattttgtcataatgactgt	208466	598098	kinase_related	signal transducer	-	
843	CHK	NM_001277.1	938	atgactgtcaagaagaataatc	208467	598099	see also 842 line			
844	CHUK	NM_001278.2	779	tacctgtgcataagaagataaga	76933	498248	kinase_related	transcription factor	-	
845	CHUK	NM_001278.2	841	caggagaagttcgggttagtagc	76935	498249	see also 844 line			



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846	CHUK	NM_001278.2	1449	atgtaagtcttcttagatataa	76958	498278	see also 844 line			
847	CLCN6	NM_001286.1	691	tacggaagatccagtttaacttc	263417	647057	channel, signal_transduction	-		
848	CLIC1	NM_001288.3	847	ggagagtgatcggtacttgagc	263482	647125	channel	voltage-gated chloride channel	Alzheimer disease(アルツハイマー病)	
849	LDB2	NM_001290.1	144	ctctcttcggccattttatagg	30448	461162	transcription_regulat or	-		
850	LDB2	NM_001290.1	192	cagatgaccgaatctatgagatg	30450	461163	see also 849 line			
851	LDB2	NM_001290.1	327	atggaccaaagcgatacacatc	30453	461172	see also 849 line			
852	LDB2	NM_001290.1	328	tggaccaaaagcgatacacatc	30454	461173	see also 849 line			
853	LDB2	NM_001290.1	496	cgggaagcccatgtttaccaagg	30465	461180	see also 849 line			
854	LDB2	NM_001290.1	1052	gaggacgaagggctaatcactag	30476	461185	see also 849 line			
855	LDB2	NM_001290.1	1053	aggacgaagggctaatcactaga	30477	461186	see also 849 line			
856	LDB2	NM_001290.1	1060	aagctaatacctagattagaaa	30478	461188	see also 849 line			
857	LDB2	NM_001290.1	1154	aacagccgtggaaacagtaaac	30482	461189	see also 849 line			
858	CNGA3	NM_001298.1	1346	gggtatccggtggtttgactac	107955	517887	channel, signal_transduction	potassium channel	achondroplasia(軟骨形成不全症)	
859	CPD	NM_001304.3	744	gtgagatccgcaggaacaagtgtg	185792	579930	-	-		
860	CPD	NM_001304.3	745	tggatccgcaggaacaagtgtgt	185793	579931	see also 859 line			
861	CPD	NM_001304.3	794	cagtgtagcaagctatctctttt	185795	579932	see also 859 line			
862	CPD	NM_001304.3	796	gtgtagcaagctatctcttttga	185796	579933	see also 859 line			
863	CPD	NM_001304.3	1122	tctgtagcttctgacacattga	185807	579947	see also 859 line			
864	CPD	NM_001304.3	1221	ctcagtggtggttattatcata	185811	579952	see also 859 line			
865	CPD	NM_001304.3	2840	ttctgagggactgttaataaac	185882	580006	see also 859 line			
866	CPD	NM_001304.3	3504	cagcatgaagattatagtgtca	185899	580028	see also 859 line			
867	CPD	NM_001304.3	3881	cagataaccggatattggtttg	185917	580038	see also 859 line			
868	CPD	NM_001304.3	4049	aagatgaattcgcagatgtct	185927	580045	see also 859 line			
869	CSE1L	NM_001316.2	1177	ttgtgctaacatggaattaga	128369	530499	receptor_activity, apoptosis	-		
870	CSE1L	NM_001316.2	1789	ttctgtaacaacacctttcaaa	128388	530523	see also 869 line			
871	CSE1L	NM_001316.2	2403	cacatgctctgtaacatcattga	128402	530537	see also 869 line			
872	CSNK2B	NM_001320.5	428	atccaggacaaatttaattctac	205578	596375	kinase_related, signal_transduction	protein kinase CK2, regulator		
873	CSNK2B	NM_001320.5	942	tccaagccgcagcaactcaag	205589	596383	see also 872 line			
874	CSTF2	NM_001325.1	591	ttctgcatgccagacaaatc	50218	482223	-			
875	CSTF2	NM_001325.1	722	ttgggtgagtcagtcgaatgg	50224	482226	see also 874 line			
876	CSTF3	NM_001326.1	254	ggcgagaatcaacctagaca	50236	670535	-			
877	CSTF3	NM_001326.1	550	atcagatttggtggattacac	50244	670545	see also 876 line			
878	CSTF3	NM_001326.1	629	agctgctcgaaggtttatcaac	50246	670549	see also 876 line			
879	CSTF3	NM_001326.1	779	tagacgtgtagcaaaaggaatg	50254	670556	see also 876 line			
880	CSTF3	NM_001326.1	1177	atgaagagagtcgcagtaagt	50266	670565	see also 876 line			
881	CSTF3	NM_001326.1	1495	ctcactcaatgaggaacaatac	50282	670576	see also 876 line			
882	CSTF3	NM_001326.1	1497	cacctcaatgaggaacaataac	50283	670577	see also 876 line			
883	CSTF3	NM_001326.1	2186	aaggcccaacaggagattcagatg	50301	670589	see also 876 line			

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884	CTNND1	NM_001331.1	666	gtcggggtctaccacaagatgc	278921	660498	-	structural molecule	-
885	CTNND1	NM_001331.1	1820	ctgtggagctctoaagaatatot	278941	660526	see also 884 line		
886	CTNND1	NM_001331.1	1916	togaaggctcgtgataggacc	278945	660532	see also 884 line		
887	DAB2	NM_001343.1	145	atgtcttaacaaagtagaacaag	309080	534276	-	-	-
888	DAB2	NM_001343.1	598	ggcacaacagctgaaccattagt	309087	534291	see also 887 line		
889	DAB2	NM_001343.1	847	ctgttagtggtctaaactctga	309091	534303	see also 887 line		
890	DAB2	NM_001343.1	1468	ggcagaaggaactgtgaagtcttc	309099	534315	see also 887 line	diacylglycerol	-
891	DGKG	NM_001346.1	1562	acogggtgcacaaaaagtatcaag	141743	547240	kinase, related	kinase	-
892	DGKG	NM_001346.1	1563	ccgggtgccacaaaagtataaagt	141744	547241	see also 891 line		
893	DGKG	NM_001346.1	1627	atgaagttaccgcgaatga	141745	547242	see also 891 line		
894	DGKG	NM_001346.1	1629	gacgtttcaacgcgaatgaat	141746	547243	see also 891 line		
895	DGKG	NM_001346.1	1634	ttcacgcgaatgtgaattatca	141748	547244	see also 891 line		
896	DARS	NM_001349.1	275	taogtgcgaaggtcatcaaacg	58927	482667	-	nucleic acid binding	Alzheimer disease(アルツハイマー病)
897	DARS	NM_001349.1	378	tgcacgaagcagatggttaaat	58928	482669	see also 896 line		
898	DARS	NM_001349.1	1276	ttggctgtaagacattcttatcc	58955	482695	see also 896 line		
899	DARS	NM_001349.1	1277	tggctgtaagaccctttctatcc	58956	482696	see also 896 line		
900	DARS	NM_001349.1	1280	ctgtgaagacctttctatccatg	58957	482697	see also 896 line		
901	DDX3X	NM_001356.2	2492	aacgagaggaacataaatattac	24899	457706	-	-	-
902	DXH9	NM_001357.2	259	atgtgccagagacttggtaaac	25023	458216	-	-	-
903	DXH9	NM_001357.2	3014	tactaacactgcacagagataata	25088	458315	see also 902 line		
904	DXH9	NM_001357.2	3020	cactgacacagataaataattgg	25090	458316	see also 902 line		
905	DXH9	NM_001357.2	3067	ttgggtgtaacccaatgtatgac	25091	458318	see also 902 line		
906	DXH9	NM_001357.2	3072	gtgtacccaatgtatgtctatca	25092	458319	see also 902 line		
907	DXH9	NM_001357.2	3075	tacccaatgtatgtctatcataa	25093	458320	see also 902 line		
908	DXH9	NM_001357.2	3076	acccaatgtatgtctatcataag	25094	458321	see also 902 line		
909	DXH9	NM_001357.2	3077	ccccaatgtatgtctatcataagg	25095	458322	see also 902 line		
910	DXH9	NM_001357.2	3503	agctgtggtatcaaccttatga	25109	458330	see also 902 line		
911	DXH15	NM_001358.1	524	accacatactctcgtactatga	59548	483446	-	RNA helicase	-
912	DXH15	NM_001358.1	525	cccatactctcgtactatga	59549	483447	see also 911 line		
913	DXH15	NM_001358.1	530	tactctcgtactatgatatttc	59550	483448	see also 911 line		
914	DXH15	NM_001358.1	533	tcctcgtactatgatattctaa	59551	483449	see also 911 line		
915	DXH15	NM_001358.1	535	ctcgtactatgatattctaaag	59552	483450	see also 911 line		
916	DXH15	NM_001358.1	1007	gagatcagatttaagggttatag	59563	483462	see also 911 line		
917	DXH15	NM_001358.1	1010	atcagatttaagggttatagta	59564	483463	see also 911 line		
918	DXH15	NM_001358.1	1062	cagatttacttgataactgtcc	59566	483468	see also 911 line		
919	DXH15	NM_001358.1	1260	aagagaataaagcgtgaagtga	59575	483471	see also 911 line		
920	DXH15	NM_001358.1	1262	gagaataaagcgtgaagtgtatg	59576	483472	see also 911 line		
921	DXH15	NM_001358.1	1990	cagatggggccagagatgagattt	59595	483496	see also 911 line		
922	DXH15	NM_001358.1	2201	tacaagcagagactattattata	59605	483509	see also 911 line	2, 4-dienoyl-CoA reductase	-
923	DECR1	NM_001359.1	662	tcgtgacactagaattggaaaa	224269	613899	-	dihydroorotate oxidase	-
924	DHODH	NM_001361.1	255	ggccataaattccgaatccagct	223970	612202	-		

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925	DLG2	NM_001364.1	2519	ggcagtagcaatgacaaatttatat	209272	680961	kinase_related	guanylate kinase	-
926	DLG2	NM_001364.1	2818	aaccaatgcaagcttgattga	209279	680971	see also 925 line		
927	DLG4	NM_001365.1	2475	gacgagagtggtcaaggtaaag	126176	643153	kinase_related,	protein C-terminus binding	-
928	DLG4	NM_001365.1	2644	ctccaggttcccgcacaagtttg	126177	643157	signal transduction		
929	DLG4	NM_001365.1	2645	tcceaggttcccgcacaagtttg	126178	643158	see also 927 line		
930	DNAH5	NM_001369.1	1152	tcctacactataaatacgaattg	79139	499970	-	-	-
931	DNAH5	NM_001369.1	3463	ttcaaacgctacaatacacattg	79210	500028	see also 930 line		
932	DNAH5	NM_001369.1	4837	aggtacaatatgccatcaaacg	79252	500055	see also 930 line		
933	DNAH5	NM_001369.1	4887	ttccaactcaaacagacatcatcg	79254	500056	see also 930 line		
934	DNAH5	NM_001369.1	11541	ggcgttgtaataagatgtatg	79449	500159	see also 930 line		
935	DNAH5	NM_001369.1	11870	ggcgtgaatttggtgaacttagc	79460	500173	see also 930 line		
936	DNAH5	NM_001369.1	13729	ttgatgcctgcatgaaggattga	79502	500216	see also 930 line		
937	DNAH8	NM_001371.1	1897	aagctgtcatcogtoagataaac	79944	500284	-	-	-
938	DNAH8	NM_001371.1	1898	agctgtcatcctcagataaaca	79945	500285	see also 937 line		
939	DNAH8	NM_001371.1	12430	ctgtgcaggagcgacgaaatatt	80270	500562	see also 937 line		
940	DNAH8	NM_001371.1	13149	aacatgatgatgctgctatacc	80288	500593	see also 937 line		
941	DNAH8	NM_001371.1	13152	atgatgatgctgctatacc	80289	500594	see also 937 line		
942	DNAH8	NM_001371.1	988	cagaggaccactccaaatgctgc	25323	591101	apoptosis	deoxyribonuclease	-
943	DNAH1	NM_001376.2	5563	agccagatgagatttactttga	80668	500704	-	-	-
944	DNAH1	NM_001376.2	7693	gccaaagtgctcagattgaagt	80703	500735	see also 943 line		
945	DNAH1	NM_001376.2	10962	aagctacgaccctcatttgacc	80763	500808	see also 943 line		
946	DNAH1	NM_001376.2	12270	agccttaacaaagacagataaag	80788	500825	see also 943 line		
947	DNAH2	NM_001378.1	189	ggcgtgattggaacgaagaagc	299594	668038	-	microtubule motor	-
948	DNAH2	NM_001378.1	1410	ttccatccacagagtagcatgg	299620	668071	see also 947 line		
949	DNMT1	NM_001379.1	465	gggctacctggctaaagcacaat	25332	458459	transcription_regulat or	zinc binding	schizophrenia(精神分裂病)
950	DPAGT1	NM_001382.1	251	ggcattccccccaccatgaattg	209558	598901	-	transferrase、glycosyl groups	-
951	DPYSL2	NM_001386.3	310	cacgagcagatgctctctgata	203848	595572	signal transduction	dihydropyrimidinas	-
952	DPYSL2	NM_001386.3	313	gagcagatgctctctgataaag	203849	595573	see also 951 line		
953	DPYSL2	NM_001386.3	314	agcagatgctctctgataaag	203850	595574	see also 951 line		
954	DPYSL3	NM_001387.1	684	ggggcattgctcgaattgctgc	203885	595601	signal transduction	dihydropyrimidinas	-
955	DSCAM	NM_001389.2	504	tcagagcttcgcgaatgttttc	318849	742747	-	-	-
956	DSCAM	NM_001389.2	509	agcttcgcaatgttttca-iga	318850	742748	see also 955 line		
957	DSCAM	NM_001389.2	1955	gtcctgaccagcctcgaataaa	318881	742763	see also 955 line		
958	DSCAM	NM_001389.2	1956	tcctgtaccagcctcgaataaac	318882	742764	see also 955 line		
959	DSCAM	NM_001389.2	5465	cccaggctcagctttgattga	318964	742811	see also 955 line		
960	DYRK1A	NM_001396.2	740	tgcattggaacgccactttatg	80925	500911	kinase_related	-	-
961	DYRK1A	NM_001396.2	749	aacgccatttatgtttcgaac	80927	500912	see also 960 line		
962	DYRK1A	NM_001396.2	861	acgaagtttgccgacacagatgt	80929	500917	see also 960 line		
963	DYRK1A	NM_001396.2	899	tccttgccagctcagaactagt	80930	500918	see also 960 line		
964	DYRK1A	NM_001396.2	906	gactccagaacttagtatcattc	80933	500919	see also 960 line		

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965	DYRK1A	NM_001396.2	911	cagaacttagtatoattactgt	80934	500920	see also 960 line				
966	DYRK1A	NM_001396.2	1326	accagaaccgcgttaacttcata	80946	500933	see also 960 line				
967	DYRK1A	NM_001396.2	1328	caggaaaccgttaacttcataac	80947	500934	see also 960 line				
968	DYRK1A	NM_001396.2	1329	aggaaaccgttaacttcataaca	80948	500935	see also 960 line				
969	DYRK1A	NM_001396.2	2159	atgagctatgagagcttaatttg	80960	500953	see also 960 line				
970	DYRK1A	NM_001396.2	2160	tggagctatgagagcttaatttg	80961	500954	see also 960 line				
971	DYRK1A	NM_001396.2	2252	caagctctgcacattacatgact	80966	500956	see also 960 line				
972	ED1	NM_001399.3	695	taggcgttggtgcgcgaataaaa	167628	564725	signal_transduction transcription_regulat	tumor necrosis factor receptor	Christ-Siemens-Touraine syndrome(クリスト・ シーメンス症候群)、ectodermal dysplasia(外胚葉 性形成異常)		
973	ED1	NM_001399.3	1002	caaggccaagggtcagaattca	167634	564731	see also 972 line	ligand			
974	EDG2	NM_001401.2	1040	atgttcgcagaggactatgaga	238570	622818	receptor activity、 signal_transduction				
975	OELSR3	NM_001407.1	5084	tacagtgcactgagatactaca	140657	546266	gpcr、 receptor_activity、 signal_transduction				
976	OELSR3	NM_001407.1	8700	tacaacaacacggctctcttga	140682	546310	see also 975 line	structural molecule			
977	EIF2B1	NM_001414.1	741	aagacgtccacagataagtttaag	56318	476457	translation initiation factor				
978	EIF2B1	NM_001414.1	744	acgtccacagataagtttaagtat	56319	476458	see also 977 line				
979	EIF4G2	NM_001418.1	328	gggggtctctctcgtttcagtcg	51321	704297	cell cycle				
980	EIF4G2	NM_001418.1	530	atgcaatcttcaggaagaatga	51326	704299	see also 979 line				
981	EIF4G2	NM_001418.1	551	gagcacaacttaataagcttact	51330	704300	see also 979 line				
982	EIF4G2	NM_001418.1	615	gggttagagtgctaaactatcc	51331	704302	see also 979 line				
983	EIF4G2	NM_001418.1	642	agggctacactgcgtatgtgg	51333	704303	see also 979 line				
984	EIF4G2	NM_001418.1	723	ggcagaagatgcaccaactttg	51337	704304	see also 979 line				
985	EIF4G2	NM_001418.1	1236	tcctcgcaaggcttttttgaca	51356	704315	see also 979 line				
986	EIF4G2	NM_001418.1	1284	tcgtcaagatgcagtaaaagatc	51362	704319	see also 979 line				
987	EIF4G2	NM_001418.1	1455	tggtagtgcagcagagttatcc	51367	704324	see also 979 line				
988	EIF4G2	NM_001418.1	1467	aggagttatccagatagatttt	51368	704327	see also 979 line				
989	EIF4G2	NM_001418.1	1498	atggagcgtcatcgttcaaatca	51369	704328	see also 979 line				
990	EIF4G2	NM_001418.1	1655	tgcgaaggacagtcgaaggatag	51374	704329	see also 979 line				
991	EIF4G2	NM_001418.1	2582	ctcccaacttcattagatataaa	51409	704361	see also 979 line				
992	EIF4G2	NM_001418.1	2583	tcocaaacttcattagataaag	51410	704362	see also 979 line				
993	ELAVL1	NM_001419.2	659	taccagtttcaatggtoataaac	47559	473690	mRNA binding、3' UTR				
994	ELF5	NM_001422.2	773	gagccctgagatactactataaa	3132	443345	transcription_regulat or				
995	EP300	NM_001429.1	1234	cagccaagcggcctaaactctoa	3235	526252	transcription_regulat or、 signal_transduction				
996	EP300	NM_001429.1	1277	cggcagcagatggcacagatttg	3236	526254	cell cycle transferase				

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997	EP300	NM_001429.1	1278	gccagcgcgagccacagatttgg	3237	526255	see also 995 line		
998	EP300	NM_001429.1	1739	aggcaatggacaagagataatgc	3251	526264	see also 995 line		
999	EP300	NM_001429.1	2611	ttggactaccctatcaagtaaat	3268	526279	see also 995 line		
1000	EPB41L2	NM_001431.1	1988	tagtgaactcaagcgcaatttta	117079	522634	-	structural constituent of cytoskeleton	-
1001	EPB41L2	NM_001431.1	2647	cagagccacacagtggttaaaaca	117091	522643	see also 1000 line		
1002	ERN1	NM_001433.1	415	tcccatgcgcgaagtccagatgg	26160	459255	kinase_related	-	-
1003	ERN1	NM_001433.1	1833	tggagctgagggcaccaatttgt	26182	459271	see also 1002 line		
1004	ERN1	NM_001433.1	2711	tggactggcgggaggaacatcact	26190	459296	see also 1002 line		
1005	ESR2	NM_001437.1	919	aggatgtaaggccctttttaa	3446	443536	receptor_activity, transcription_regulat or,	transcription co-activator	breast cancer(乳癌)、Alzheimer disease(アルツハイマー病)
1006	ESRRG	NM_001438.1	835	cagccaaaagccatatacaag	3487	443585	-	translation	-
1007	ESRRG	NM_001438.1	1120	ttgtctatgcagacgattatata	3491	443588	see also 1006 line		
1008	ESRRG	NM_001438.1	1122	gtctatgcagacgattatataat	3492	443589	see also 1006 line		
1009	EXTL3	NM_001440.1	2141	ggcggcgaagccgctttctgg	213486	601794	-	transferring glycosyl groups	-
1010	GPC4	NM_001448.2	322	acgtgtccaaaggcttcaacaag	246333	633648	receptor_activity	-	-
1011	GPC4	NM_001448.2	1150	atccatcgtatgaagatttct	246357	633674	see also 1010 line		
1012	GPC4	NM_001448.2	1251	ctccagctggagcaattctcg	246360	633680	see also 1010 line		
1013	GPC4	NM_001448.2	1356	ttggaccgactgggtactgatgt	246362	633683	see also 1010 line		
1014	FOXO3A	NM_001455.1	2384	cacagctggaccacctgattgt	4174	444142	transcription_regulat or, apoptosis	transcription factor	-
1015	FMO5	NM_001461.1	672	aggagatctggctgtagagatta	221405	608316	-	disulfide oxidoreductase	-
1016	FMO5	NM_001461.1	674	eggatctggctgtagagattagc	221406	608318	see also 1015 line		
1017	GABBR1	NM_001470.1	1315	atcatcgtgggacttttctatga	178993	629584	receptor_activity, signal_transduction	-	alcoholism(アルコール依存症)
1018	GABBR1	NM_001470.1	1319	tcgtgggacttttctatgagact	178994	629585	see also 1017 line		
1019	GABBR1	NM_001470.1	1344	agcccggaagatttttttgagg	178997	629588	see also 1017 line		
1020	GAS8	NM_001481.1	659	gaggcaagtcgagaattgagg	280374	667234	-	-	-
1021	GATM	NM_001482.1	108	cgcgagggcggtgcactacatcg	214929	604846	-	glycine amidinotransferase	-
1022	GATM	NM_001482.1	657	caggtcaattatcaagactact	214952	604863	see also 1021 line		
1023	GATM	NM_001482.1	873	gagaagccaggttcaaaactacc	214954	604868	see also 1021 line		
1024	GATM	NM_001482.1	1188	tggcaatgaagttccaattcaaa	214962	604877	see also 1021 line		
1025	GATM	NM_001482.1	1196	aagttccaattcaaaagattgtt	214963	604879	see also 1021 line		
1026	NR6A1	NM_001489.2	1100	gcgagctctcaatcaaggattac	8711	447418	transcription_regulat or,	-	-
1027	GCLC	NM_001498.1	1205	tgcctcatctttttatagacc	231947	616941	-	Proto-oncogene C-JUN	-
1028	GCLC	NM_001498.1	1758	ctgaactacccaagctaattaa	231955	616958	see also 1027 line		

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1029	GCLC	NM_001498.1	1784	gagagcatcttgagagaactaatga	231956	616959	see also 1027 line		GDP-mannose 4, 6-dehydratase	-
1030	GMD5	NM_001500.1	745	agccggctcagtagctaaagattta	233634	614190	-			
1031	GMD5	NM_001500.1	746	gcccgtcagtagctaaagatttac	233635	614191	see also 1030 line			
1032	GPLD1	NM_001503.2	2300	atagcttagatgaataatcatcctg	197357	589683	-			
1033	GPLD1	NM_001503.2	2301	tgccttagatgaataatcatcctg	197358	589684	see also 1032 line			
							receptor activity, channel,			
1034	GRID2	NM_001510.1	82	cacatcgagcaatttttgatga	244680	696796	signal transduction	-		
1035	GRID2	NM_001510.1	862	atcgtatcagagacactcttagg	244692	696806	see also 1034 line			
1036	GRID2	NM_001510.1	2128	cggatgatcaaccgaagaactagg	244743	696845	see also 1034 line			
1037	GRID2	NM_001510.1	2626	cacctcatagacgtgtaaatag	244758	696856	see also 1034 line			
1038	GRID2	NM_001510.1	2627	acctccatagacgtgtaaatagc	244759	696857	see also 1034 line			
1039	GRID2	NM_001510.1	2630	tcctatagacgtgtaaatagcttg	244760	696858	see also 1034 line			
1040	GRID2	NM_001510.1	2709	ccctctggacattgacacttgc	244764	696861	see also 1034 line			
1041	GRID2	NM_001510.1	2876	agcaccgaactggcccttttagg	244766	696863	see also 1034 line			
							transcription_regulat	general RNA polymerase II transcription factor	-	
1042	GTF2B	NM_001514.2	439	tagtgatcgacaacaataattta	275434	657925	or			
1043	GTF2I	NM_001518.2	555	gactgtcttttgcaataccaga	4582	459810	-			
1044	GTF2I	NM_001518.2	1009	aagttgtggcccaatcaaatga	4586	459820	see also 1043 line			
1045	GTF3C2	NM_001521.1	46	acctggcgggtcggtctgttgc	131596	731311	-			
1046	GTF3C2	NM_001521.1	1936	ggagtgacccgggaatacaaat	131619	731337	see also 1045 line			
1047	HDAC2	NM_001527.1	1037	cagtcagaagtcacttaaatgt	4713	526353	-		transcription factor	-
1048	HDAC2	NM_001527.1	1184	atgagtgccataatgaattac	4718	526362	see also 1047 line			
1049	HGFAC	NM_001528.2	1458	cacctgtactcgtgtgtcaacc	182160	575490	-		trypsin	-
							transcription_regulat			
1050	HIF1A	NM_001530.2	323	aagttctgaacgtcgaaagaaa	225	444481	or			
1051	HIF1A	NM_001530.2	328	ctgaactgtcgaaagaaaagtct	226	444482	see also 1050 line			
1052	HIF1A	NM_001530.2	1098	ggccgtcaatttatgaattta	253	444511	see also 1050 line			
1053	HIF1A	NM_001530.2	1208	tgccaaaaggagggtgatgtct	256	444516	see also 1050 line			
1054	HIF1A	NM_001530.2	1240	ctcaagcaactgtcatatataac	257	444518	see also 1050 line			
1055	HIF1A	NM_001530.2	1789	ccgatggaaagcactagacaaagt	279	444527	see also 1050 line			
							transcription_regulat	transcription co-repressor	-	
1056	ID4	NM_001546.2	555	gtacctgcagtcgcatatgaacg	113122	690236	or			
1057	IFRD1	NM_001550.1	589	atgactttaactgatagcattga	319610	704459	-			
1058	IFRD1	NM_001550.1	720	aactcttgaccacaatcctaaaga	319613	704463	see also 1057 line			
1059	IGFBP7	NM_001553.1	488	tgcgagcaaggtcctctccatagt	124925	528755	-		antigen binding	-
1060	IGFBP7	NM_001553.1	719	gtgtgttatctctcttaagtaa	124927	528761	see also 1059 line			
1061	IGFBP7	NM_001553.1	720	tgtgtgtatctctcttaagtaag	124928	528762	see also 1059 line			
1062	IGSF1	NM_001555.1	1928	tggctcaactaaggaggttgtgt	319101	796876	-			
1063	IGSF1	NM_001555.1	3024	cccataagggcagaatgtactct	319122	796897	see also 1062 line			
1064	IGSF1	NM_001555.1	3769	tccaggctaccctgatattctgg	319140	796923	see also 1062 line			
1065	INPP4A	NM_001566.1	462	tactccatcgctagatcgaaagc	317750	742140	signal transduction	-		

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1066	INPP4A	NM_001566.1	1271	aagcagataaaaggttagaattt	317772	742152	see also 1065 line		ATP-binding cassette (ABC) transporter	-
1067	ABCA2	NM_001606.2	1845	gcggctggatccagttcatgtcc	68768	490694	-			
1068	ABCA2	NM_001606.2	6094	cccttcgagtgaggacattgtca	68792	490732	see also 1067 line			
1069	ACRV1	NM_001612.4	906	ttccagcagtcagtgttaaga	320627	688456	-			
1070	ACVR2	NM_001616.2	475	ctgtcaggcgaatgtgtatgt	71703	493299	receptor activity, signal transduction, kinase related	transforming growth factor-beta receptor	-	
1071	ACVR2	NM_001616.2	659	atggcctaccctcctgtacttgt	71714	493307	see also 1070 line			
1072	ACVR2	NM_001616.2	1030	gtgtcatattgcagaaccatgg	71726	493314	see also 1070 line			
1073	ACVR2	NM_001616.2	1051	ggctagagattggcatatttac	71727	493316	see also 1070 line			
1074	ACVR2	NM_001616.2	1448	caggaagtgtgtgtgcataaaa	71735	493324	see also 1070 line			
1075	ACVR2	NM_001616.2	1683	ctcccaagaatctagtctatga	71738	493331	see also 1070 line			
1076	AHR	NM_001621.2	693	agccgggtgcagaaaaacagtaag	772	454610	transcription, regulation, receptor activity, apoptosis, cell cycle	translation regulator	-	
1077	AHR	NM_001621.2	884	agcttcttgatgtgcataaa	786	454620	see also 1076 line			
1078	AKT2	NM_001626.2	244	agcgtgtgtaatacatcaagacc	71965	493659	kinase related	protein serine/threonine kinase	breast cancer(乳癌), ovarian cancer(原発性卵巣癌), pancreatic cancer(膵臓癌), malignant thymoma(悪性胸腺腫)	
1079	AKT2	NM_001626.2	406	cgcgacccaacacctttgtcata	71969	493661	see also 1078 line			
1080	ALCAM	NM_001627.1	341	cagaaaactacactttgtctatc	170930	682253	signal transduction	receptor binding	-	
1081	ALCAM	NM_001627.1	451	gtgttaagcaaccatcataacc	170934	682257	see also 1080 line			
1082	AMBP	NM_001633.2	554	cacaaatccaatggacataac	180342	655700	-	transporter	Mediterranean fever(地中海熱), periodic disease(周期性疾患)	
1083	AOAH	NM_001637.1	1058	gactcagctggggctcatttca	199816	595112	-	lipoprotein lipase	-	
1084	APEX1	NM_001641.2	1162	atgtgtgtggcgccttgattac	21395	591077	transcription, regulation or	-		
1085	APEX1	NM_001641.2	1165	ttgtgtggcgccttgatattt	21396	591078	see also 1084 line			
1086	APEX1	NM_001641.2	1169	ttggcgccttgattactttgt	21398	591079	see also 1084 line			
1087	APLP2	NM_001642.1	1177	ctgccaaaccaatgatgtgtgt	21427	454819	-	serine protease inhibitor	-	
1088	APLP2	NM_001642.1	1179	gccaaaccaatgatgtgtgtgt	21428	454820	see also 1087 line			
1089	APLP2	NM_001642.1	1280	accgaatggacaggttaagaag	21430	454822	see also 1087 line			
1090	APLP2	NM_001642.1	2048	tggatgtaagggaatgatttc	21444	454837	see also 1087 line			
1091	APOD	NM_001647.1	193	aagatgtacgaaattgagaaga	173246	570047	-	transporter	-	
1092	APXL	NM_001649.2	3683	agcgggtgatggacaacaacacc	262481	773670	channel	amiloride-sensitive sodium channel	melanoma(メラノーマ)	
1093	AQP4	NM_001650.3	936	tggagtgtgcatgtgtgacg	263840	647510	-	-	-	
1094	ARAF1	NM_001654.1	488	ctgaccatgcacaaatttgtacg	72297	494006	kinase related	receptor signaling protein	-	

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1095	ARFD1	NM_001656.2	695	cagatccgagcatcaattttaga	108259	520579	signal transduction	-	-
1096	ARF6	NM_001663.2	730	ggcgtctctggcggcattactaca	108231	518624	signal transduction	protein transporter	Alzheimer disease(アルツハイマー病)
1097	ARF6	NM_001663.2	732	cgtctctggcggcattactacact	108232	518625	see also 1096 line		
1098	ARF6	NM_001663.2	819	aggagctgcaccgcgcatattacaat	108234	518626	see also 1096 line		
1099	ARF6	NM_001663.2	1005	atgaggcttcacatggttaacc	108237	518630	see also 1096 line		
1100	ARF6	NM_001663.2	1008	aggggctcacatggttaacctct	108238	518631	see also 1096 line		
1101	ARF6	NM_001663.2	1015	cacatggttaacctcttaactaca	108239	518632	see also 1096 line		
1102	ATP2A2	NM_001681.2	360	tactgcaagcatgatatctttt	72712	494427	-	-	Darier-White disease(ダリエー病)
1103	ATP2A2	NM_001681.2	859	tggcaagatccgggatgaatgg	72726	494446	see also 1102 line		
								plasma membrane cation-transporting ATPase	-
1104	ATP2B2	NM_001683.1	3920	ctcgaacctccatccataacttc	72934	494528	-		
1105	ATP2B2	NM_001683.1	3953	ctgaattccggatcgaagattcc	72936	494529	see also 1104 line		
								hydrogen-transporting two-sector ATPase	-
1106	ATP5J	NM_001685.3	756	cggaggaacattggtgttaacgc	266178	653517	-	hydrogen-transporting V-type ATPase	-
1107	ATP6V1A	NM_001690.2	351	gggagccatttttgatggtattc	73168	494798	-		
1108	ATP6V1A	NM_001690.2	484	aacctacgggttggtatgcatat	73173	494805	see also 1107 line		
1109	ATP6V1A	NM_001690.2	485	acctacgggttggtatgcatatc	73174	494806	see also 1107 line		
								hydrogen-transporting V-type ATPase	-
1110	ATP6V1B2	NM_001693.2	994	tggctaatgaccccaaccattga	73261	494859	-		
								hydrogen-transporting V-type ATPase	-
1111	ATP6V1C1	NM_001695.2	1273	aagaataactaccctatgigtac	73324	494909	gpcr, receptor activity, signal transduction		
									thyroid cancer(甲状腺癌)、chronic myeloid leukemia(慢性骨髄性白血病)、rheumatoid arthritis(関節リウマチ)、colorectal cancer(大腸癌)、leukemia(白血病)、colorectal cancers(結腸癌)
1112	AXL	NM_001699.3	2418	ctgagtaccacaagagattcataca	73964	495684	receptor activity, kinase related		
1113	AXL	NM_001699.3	2420	gagtaccacaagagattcatacacc	73965	495685	see also 1112 line		
								gpcr, receptor activity, signal transduction	colorectal cancer(大腸癌)、colorectal cancers(結腸直腸癌)
1114	BAI1	NM_001702.1	2959	ctctccaccttggccatttagc	129221	532473	-	protein binding	
1115	BAI2	NM_001703.1	1920	gtgtccagccctccatgagatgt	242213	629997	-	G-protein coupled receptor	
1116	BAI3	NM_001704.1	41	ctgttgtaacctgctgatttat	242235	630026	gpcr, receptor activity, signal transduction	G-protein coupled receptor	
1117	BAI3	NM_001704.1	44	tctgtaacctgctgatttatata	242236	630027	see also 1116 line		
1118	BAI3	NM_001704.1	218	cagatccaaccaaatatagatt	242247	630033	see also 1116 line		
1119	BAI3	NM_001704.1	289	ctgcttatcagtttgatcattt	242250	630037	see also 1116 line		
1120	BAI3	NM_001704.1	290	tggcttatcagtttgatcattt	242251	630038	see also 1116 line		



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1121	BAI3	NM_001704.1	967	caggtgcgaaccagaaactgtgt	242268	630058	see also 1116 line		
1122	BAI3	NM_001704.1	970	gtgcgaaccagaaactgtgtatc	242269	630059	see also 1116 line		
1123	BAI3	NM_001704.1	971	tgcaaacagaaactgtgtatca	242270	630060	see also 1116 line		
1124	BAI3	NM_001704.1	1749	cagacactgcagcattcaatta	242284	630071	see also 1116 line		
1125	BAI3	NM_001704.1	1751	gacactgcagcattcaattaaa	242285	630072	see also 1116 line		
1126	BAI3	NM_001704.1	2799	ctcatcaatctctcatatgg	242319	630111	see also 1116 line		
1127	BAI3	NM_001704.1	3393	gacagataaacgctccattgt	242330	630123	see also 1116 line		
1128	BAI3	NM_001704.1	3862	ttgcggagaaactgtgtactatg	242352	630145	see also 1116 line		
1129	BAI3	NM_001704.1	4069	aacctgaattcaatgaatcc	242358	630155	see also 1116 line		
1130	BAI3	NM_001704.1	4172	ctcgcacagctgtgaggaatttc	242360	630164	see also 1116 line		
1131	BAI3	NM_001704.1	4241	ctggatcaacgatataatgaat	242361	630168	see also 1116 line	non-hodgkin lymphoma(非ホジキンリンパ腫)、 leukemia(白血病)	
1132	BCL6	NM_001706.2	437	ttgtgagcgcgtgagcagttaga	1478	456293	transcription_regulat		
1133	BCL6	NM_001706.2	439	gtgagcgcgtgagcagtttagagc	1479	456294	see also 1132 line		
1134	BDNF	NM_001709.3	295	tccttttcttactactgtgtatt	168949	532682	-		Parkinson disease(パーキンソン病)、 schizophrenia(精神分裂病)
1135	BDNF	NM_001709.3	301	tccttactactgtgtattctatc	168951	532683	see also 1134 line		
1136	BDNF	NM_001709.3	965	tgctggcgaattcaaggaatag	168970	532696	see also 1134 line		
1137	BDNF	NM_001709.3	966	ggctggcgattcataaggataga	168971	532697	see also 1134 line		
1138	BDNF	NM_001709.3	970	ggcgattcataaggatagacact	168972	532698	see also 1134 line		
							extracellular matrix structural constituent		Alzheimer disease(アルツハイマー病)
1139	BGN	NM_001711.3	709	cagcgggctccggaaacatgaact	287619	694898	-		
1140	BGN	NM_001711.3	711	gcgggctccggaaacatgaactgc	287620	694899	see also 1139 line		
1141	BICD1	NM_001714.1	545	aggatgaatcccgagaatataag	277310	685875	-		
1142	BICD1	NM_001714.1	652	cagaaccagggtgaatactacgaagg	277314	685877	see also 1141 line		
1143	BICD1	NM_001714.1	1554	cagcatagcccaacgaaatacaca	277326	685899	see also 1141 line		
							transcription_regulat		
1144	BNC	NM_001717.2	1708	cagtatgcctatcaaaatagaga	1561	456541	transcription factor	-	
							cell_cycle、 signal_transduction		epidermolysis bullosa(表皮水疱症)
1145	BPAG1	NM_001723.3	545	tgcccttaaggaaacgaattgtct	115349	522000	see also 1145 line		
1146	BPAG1	NM_001723.3	547	gccttaaggaaacgaattgtcttc	115350	522001	see also 1145 line		
1147	BPAG1	NM_001723.3	1983	cagaattgagcaacagatcaga	115384	522042	see also 1145 line		
							receptor_activity、 gpcr、 signal_transduction		
1148	BRS3	NM_001727.1	170	ctcaacctaatcagactttaatt	176825	623729	kinase_related、 signal_transduction	bombesin receptor	Alzheimer disease(アルツハイマー病)
							gpcr、 kinase_related、 signal_transduction	endopeptidase inhibitor	lupus erythematosus(円板状エリテマトーデス)、 Alzheimer disease(アルツハイマー病)
1149	C5	NM_001735.2	2531	tacgaggagaaacagatccaattg	167165	664212	see also 1149 line		
1150	C5	NM_001735.2	2532	acgaggagaaacagatccaattga	167166	664213	see also 1149 line		
1151	C5	NM_001735.2	2534	gaggagaaacagatccaattgaaa	167167	664214	see also 1149 line		
1152	CALB2	NM_001740.2	541	aaccatactacgagattgttgaact	138941	545153	-		

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1188	CLON4	NM_001830.2	2380	aggcattgtgagcaattccatc	263351	646986	channel	voltage-gated chloride channel	-
1189	CNTR	NM_001842.3	603	gtgtcgtatggtctccaaattat	243898	631226	receptor_activity, signal_transduction	-	-
1190	CNTR	NM_001842.3	696	aagtacaaggctccaaattat	243901	631227	see also 1189 line	-	-
1191	CNTN1	NM_001843.2	241	ttgaagagcagccaatcaatcc	24433	683291	-	-	-
1192	CNTN1	NM_001843.2	394	taggaggaacccctgttatcaac	24437	683296	see also 1191 line	-	-
1193	CNTN1	NM_001843.2	827	accatatctgctgatgtatg	24456	683307	see also 1191 line	-	-
1194	CNTN1	NM_001843.2	1345	tggctccaacttttgaatgaat	24470	683321	see also 1191 line	-	-
1195	COL4A6	NM_001847.1	1014	agggtcccatgggttcagaagg	288281	659631	-	-	diffuse esophageal leiomyomatosis(びまん性食道平滑筋腫)
1196	COL4A6	NM_001847.1	4720	ggcgcaatgataaatcttactgg	288316	659669	see also 1195 line	-	-
1197	COL9A1	NM_001851.2	421	atgtagacttcaggattccaact	288594	659842	-	-	-
1198	COL11A1	NM_001854.2	844	gtgacaatgattgttgattgtaa	287652	659285	-	-	Stickler syndrome(ワーグナー・スティックラー症候群)、Marshall syndrome(Marshall症候群)
1199	COL16A1	NM_001856.2	1307	aggagcagcaggggcaatgaactgt	287974	660874	-	extracellular matrix structural constituent	-
1200	COL16A1	NM_001856.2	4533	gggagacatggtgaattatgatg	287985	660883	see also 1199 line	-	-
1201	COL19A1	NM_001858.2	2587	aacggcatgagcagatttatataa	288040	660921	-	extracellular matrix structural constituent	-
1202	GPA3	NM_001870.1	214	tccgagtagtagagaagaatcc	185566	579810	-	carboxypeptidase	-
1203	GPE	NM_001873.1	833	tggccaggaatagatgtaaac	185934	580058	signal_transduction	carboxypeptidase	-
1204	ATF2	NM_001880.2	1543	tggctatcatactgctgataaag	21850	455317	transcription_regulation or	Smad3/Sp-1 heterodimer	-
1205	CREM	NM_001881.2	642	tggcagtagcacaactagcatatat	2540	442825	transcription_regulation or,	cAMP-responsive element	-
1206	CREM	NM_001881.2	643	ggcagtagcacaactagcatatatc	2541	442826	signal_transduction see also 1205 line	modulator, alpha	-
1207	CRHR2	NM_001883.2	186	gccgtgcccgcagtagcttcaacg	242057	630174	gpcr, receptor_activity, signal_transduction	corticotrophin-releasing factor receptor structural constituent of eye lens	-
1208	CRYAB	NM_001885.1	502	tcccatcaccgcgtagagaagac	289518	659909	-	-	myopathy(ミオパシー)
1209	CSNK1E	NM_001894.4	299	tgggagtcctgcctccatcaagtgg	77666	498932	kinase_related, signal_transduction	-	-
1210	CSNK2A2	NM_001896.2	260	taccaactggttcgaaacttgg	77741	499011	kinase_related, signal_transduction	-	-
1211	CSNK2A2	NM_001896.2	415	tggacaataatcattaagtctga	77744	499022	see also 1210 line	-	-
1212	CSNK2A2	NM_001896.2	533	gactttagatccggttttat	77746	499028	see also 1210 line	-	-
1213	CSNK2A2	NM_001896.2	537	ttgatccggttttat	77747	499029	see also 1210 line	-	-
1214	CSNK2A2	NM_001896.2	564	tactaaagctctgacttctgc	77749	499030	see also 1210 line	-	-

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1215	CSNK2A2	NM_001896.2	619	acctcaaatgtctatgatgc	7753	499032	see also 1210 line	structural molecule	-
1216	CTNNA1	NM_001903.1	436	ggcagatgtctacaattactg	290172	660400	-	-	-
1217	CTNNA1	NM_001903.1	1065	atgctggacgtaaagaagaagt	290183	660423	see also 1216 line	carbon-nitrogen ligase, with glutamine as amido-N-donor	-
1218	CTPS	NM_001905.1	488	tggaaacctcaagtgtgtgtatt	232084	616998	-	-	-
1219	CTPS	NM_001905.1	492	acctcaagtgtgtgtattgagc	232085	616999	see also 1218 line	-	-
1220	CTPS	NM_001905.1	1174	gtgctgggtccaggaggattgg	232090	617012	see also 1218 line	-	-
1221	DAO	NM_001917.3	1049	cacagagatcatcacacaactatg	225944	499332	-	electron transporter	Alzheimer disease(アルツハイマー病)、schizophrenia(精神分裂病)
1222	DCT	NM_001922.2	973	tggctccattatttctgttag	162530	613861	-	oxidoreductase	melanoma(メラノーマ)
1223	DDBI	NM_001923.2	2764	tagcacgtgctggctctatgagt	16115	482784	-	damaged DNA binding	xeroderma pigmentosum(色素性乾皮症)
1224	DDBI	NM_001923.2	3102	tccacctggcgaggtttgcaat	16121	482794	see also 1223 line	-	-
1225	DDBI	NM_001923.2	3104	cacctggcgaggtttgcaatgt	16122	482795	see also 1223 line	-	-
1226	DDBI	NM_001923.2	3510	aggagctaactcgagatccattag	16132	482805	see also 1223 line	-	-
1227	GADD45A	NM_001924.2	705	atcctgccttaagtoaacattatt	285463	658316	apoptosis, cell cycle, kinase related	structural constituent of ribosome	-
1228	GADD45A	NM_001924.2	706	tcctgccttaagtcacattatt	285464	658317	see also 1227 line	-	-
1229	DES	NM_001927.2	778	aggagatcgcttccttaagaaa	287095	684762	-	structural constituent of cytoskeleton	distal myopathy with cardiomyopathy(末梢ミオパシー)、myopathy(ミオパシー)、cardiomyopathy(アールコール性心筋症)
1230	DES	NM_001927.2	780	gagatcgcttccttaagaaa	287096	684763	see also 1229 line	-	mitochondrial DNA depletion syndrome(ミトコンドリアDNA欠乏症候群)
1231	DGUOK	NM_001929.2	280	cagcacgatgctctcacattc	78242	499567	kinase related	-	-
1232	DGUOK	NM_001929.2	281	agcaagatgctctcacattc	78243	499568	see also 1231 line	-	-
1233	DLAT	NM_001931.2	539	gaggaattgagccctttaaaa	78425	499579	-	protein binding	primary biliary cirrhosis(原発性胆汁性肝硬変)
1234	DPP4	NM_001935.2	892	ctggaatccaactgaagtgc	183391	577202	-	prolyl	-
1235	DPP4	NM_001935.2	2080	cccggaggagtagctatgactca	183435	577241	see also 1234 line	-	-
1236	DR1	NM_001938.1	855	aggccaagttctcgttggaanaac	25595	458688	transcription co-repressor	-	-
1237	DR1	NM_001938.1	856	ggccagttctcgttggaanaac	25596	458689	see also 1236 line	-	-
1238	DRPLA	NM_001940.2	3429	gcctcgtgcaacctctcattga	130909	672769	-	protein binding	dentatorubral-pallidoluysian atrophy(室頂核脳幹萎縮症)、myoclonic epilepsy(ミオクローヌスてん
1239	DSG3	NM_001944.1	1434	aaccgagattctcttctcatagt	142479	547646	-	calcium ion binding	-
1240	E2F5	NM_001951.2	1004	gactacaactttaatttagatga	2944	443165	transcription regulator or, cell cycle	translation regulator	-
1241	EFNA5	NM_001962.1	723	aagaaggtctctctaaagctca	319566	684374	-	-	-
1242	EFNA5	NM_001962.1	916	agccgccttttggcaatctact	319574	684376	see also 1241 line	GPI-linked ephrin	-
1243	EFNA5	NM_001962.1	941	tctcctcggcgatgcttttgaca	319575	684377	see also 1241 line	-	-
1244	EFNA5	NM_001962.1	947	tggcgatgctttgacattag	319578	684379	see also 1241 line	-	-

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1245	EIF4A2	NM_001967.2	1129	gtgctataaacctttgtactga	25802	459072	-	translation initiation factor	-
1246	EIF4A2	NM_001967.2	1180	gagattttcaatactacagt	25803	459073	see also 1245 line		
1247	EIF5	NM_001969.3	543	cagcgtgtcagaccagttctatc	56794	476754	-		-
1248	EIF5	NM_001969.3	544	agcgtctcagaccagttctatcg	56795	476755	see also 1247 line		
1249	EIF5	NM_001969.3	612	tggaaacaagaccagttatagc	56798	476756	see also 1247 line		
1250	EIF5	NM_001969.3	643	gacgttgcaaggcgttaatcg	56799	476757	see also 1247 line		
1251	EIF5	NM_001969.3	668	ctcaacgtatccaccacaatat	56800	476758	see also 1247 line		
1252	EIF5	NM_001969.3	669	tccaacgtatccaccacaatat	56801	476759	see also 1247 line		
1253	EIF5	NM_001969.3	710	cacagaccagtttgatgaag	56802	476762	see also 1247 line		
1254	EIF5	NM_001969.3	753	tggatctcatgaggcgaataagc	56803	476763	see also 1247 line		
1255	EIF5	NM_001969.3	756	atctcatgaggcgaataagctgc	56804	476764	see also 1247 line		
1256	EIF5	NM_001969.3	765	ggcgaataagctgcaagacatgt	56805	476765	see also 1247 line		
1257	EMR1	NM_001974.3	2147	cagctctcgcaacatcaagatgc	143129	548064	gpcr, receptor_activity, signal_transduction	calcium ion binding	-
1258	ENO2	NM_001975.2	1014	cactgatcctcccgatacatca	165351	563022	-	phosphorylase	-
1259	ENPEP	NM_001977.2	2117	ttgggttttatcgtgtaaatat	156684	557583	-	zinc binding	-
1260	ENPEP	NM_001977.2	2118	tgggttttatcgtgtaaatatg	156685	557584	see also 1259 line		
1261	ENPEP	NM_001977.2	2344	acctacatcatgacgatgttga	156693	557596	see also 1259 line		
1262	ENPEP	NM_001977.2	2350	atcattagcatgttgaagatga	156694	557597	see also 1259 line		
1263	EPS15	NM_001981.1	548	accagttgtctcaactcttaagt	143200	548139	signal_transduction	calcium ion binding	leukemia(白血病)
1264	EPS15	NM_001981.1	652	ttgccatgttttggatctactgt	143203	548143	see also 1263 line		
1265	EPS15	NM_001981.1	654	gccatgttttggatctactgtc	143204	548144	see also 1263 line		
1266	EPS15	NM_001981.1	1193	aagtggagttcaggatctctaaag	143219	548161	see also 1263 line		
1267	ETV6	NM_001987.2	1071	ttctgacagccggtacgaaaact	3635	443744	transcription_regulat or	transcription factor	leukemia(白血病)、infantile fibrosarcoma(乳児線 維肉腫)
1268	ETV6	NM_001987.2	1073	ctgacagccgggtacgaaaacttc	3636	443745	see also 1267 line		
1269	ETV6	NM_001987.2	1077	cagccggtacgaaaacttcctcc	3637	443746	see also 1267 line		
1270	ETV6	NM_001987.2	1217	tgcgccactactacaaaactaac	3639	443751	see also 1267 line		
1271	ETV6	NM_001987.2	1218	gcgcactactacaaaactaaaca	3640	443752	see also 1267 line		
1272	ETV6	NM_001987.2	1222	cactactacaaaactaaacattat	3641	443753	see also 1267 line		
1273	EYA3	NM_001990.2	340	tacatccctcgcctcatccaatga	205028	595800	phosphatase, transcription_regulat or		-
1274	EYA3	NM_001990.2	343	atccctcgcctcatccaatgattga	205029	595801	see also 1273 line		
1275	EYA3	NM_001990.2	344	tcctcgtcctcatccaatgattat	205030	595802	see also 1273 line		
1276	EYA3	NM_001990.2	735	cagcatcctcaaacaggattatc	205042	595805	see also 1273 line		
1277	EYA3	NM_001990.2	820	gtcacaggtcagactaacagtgga	205043	595809	see also 1273 line		
1278	EZH1	NM_001991.2	496	atgacagcgggtttgtgcaaatatt	18532	459393	gpcr, transcription_regulat or,	transcription_regulat	-
1279	FBLN1	NM_001996.2	970	cccgtattttatctgtcagaatac	144149	548312	-	chromatin binding	-

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1280	FBLN1	NM_001996.2	1629	ctctaccgctgcatcaacatcc	144155	548325	see also 1279 line				
1281	FBLN1	NM_001996.2	1705	ggccgcaactgccaaagacattga	144157	548326	see also 1279 line			extracellular matrix structural constituent	congenital contractural arachnoidactyly (Marfanoid-like)(先天性クモ指症)
1282	FBN2	NM_001999.2	3485	aacgtaacccctctctcttggtagg	144483	548586	-				
1283	FBN2	NM_001999.2	4649	ctggctgctatgagtgaactgc	144515	548609	see also 1282 line				
1284	FBN2	NM_001999.2	8277	agcatgctacgagtgcaaatca	144587	548667	see also 1282 line				
1285	FGF2	NM_002006.2	785	ttggaatctaataactacaatac	169106	565907	kinase_related, signal_transduction, cell_cycle		Ap-1(c-Jun/c-Fos heterodimer)	atherosclerosis(粥状硬化症)、neuroblastoma(神経芽細胞腫)、prostate cancer(前立腺癌)	
1286	FGF2	NM_002006.2	786	tggaaatctaataactacaatact	169107	565908	see also 1285 line				
1287	FGF2	NM_002006.2	850	acgaactggcgagtgataaacttg	169109	565912	see also 1285 line				
1288	FGF9	NM_002010.1	179	atggctcccttagtgaaagtgg	169188	565989	signal_transduction, cell_cycle	heparin binding	-		
1289	FGF9	NM_002010.1	327	cagtcacaggacttggatcattta	169196	565991	see also 1288 line				
1290	FGF9	NM_002010.1	329	gtcacggacttggatcatttaaa	169197	565992	see also 1288 line				
1291	FKBP3	NM_002013.2	722	tggatgaggggtccaccacaaatat	179845	619012	receptor activity	receptor	-		
1292	FKBP3	NM_002013.2	830	aagatgggactgttttgatact	179850	619018	see also 1291 line				
1293	FOXO1A	NM_002015.2	462	cgcctgccacggccggagtttagc	4129	444103	transcription_regulation or, apoptosis	transcription factor	rhabdomyosarcoma(肉腫状横紋筋肉腫)		
1294	FOXO1A	NM_002015.2	1154	atggacaacacacagtaaatgtgc	4132	444108	see also 1293 line				
1295	FOXO1A	NM_002015.2	1909	cagccaggcactctcatacaaaa	4157	444124	see also 1293 line				
1296	FLI1	NM_002017.2	1053	gcgcacaaagccagctgtatcacc	3715	443884	transcription_regulation or	transcription regulator	Ewing sarcoma(ユ-イング肉腫)、Ewing's sarcoma(ユ-イング肉腫)、Ewing's tumours(ユ-イング腫瘍)		
1297	FMR1	NM_002024.1	447	ttgctgttggttgtagtacaag	47884	473787	-			mental retardation(精神遅滞)、Martin-Bell syndrome(Martin Bell症候群)	
1298	FMR1	NM_002024.1	587	aagatactttccataaagatcaag	47889	473799	see also 1297 line				
1299	FMR1	NM_002024.1	1090	aacttagtaggcaaaagtaataagg	47914	473821	see also 1297 line				
1300	FMR1	NM_002024.1	1314	ttctaacctaacagtagacaaaag	47917	473822	see also 1297 line				
1301	FMR1	NM_002024.1	1396	aaggcttggcagggtatgtgtacc	47919	473824	see also 1297 line				
1302	FMR1	NM_002024.1	1401	ttggcagggtatgtgtaccatttg	47920	473825	see also 1297 line				
1303	FMR1	NM_002024.1	1405	cagggtatgtgtaccatttggtttt	47921	473827	see also 1297 line				
1304	FMR1	NM_002024.1	1507	ttgcgttggagagattacaaat	47924	473831	see also 1297 line				
1305	FMR1	NM_002024.1	1568	caccacaaatcgtacagataaag	47927	473836	see also 1297 line				
1306	FMR1	NM_002024.1	1569	accacaaatcgtacagataaag	47928	473837	see also 1297 line				
1307	FMR1	NM_002024.1	1572	accacaaatcgtacagataaagaa	47929	473838	see also 1297 line				
1308	FMR1	NM_002024.1	1663	ggcagacgcggctctggtatatac	47931	473839	see also 1297 line				
1309	FMR1	NM_002024.1	1667	gacggctcttggtatatacttca	47932	473840	see also 1297 line				
1310	FMR1	NM_002024.1	1669	cgcggctcttggtatatacttcagg	47933	473841	see also 1297 line				
1311	FMR1	NM_002024.1	2028	tcggctgcgcagggtaaaagatc	47938	473844	see also 1297 line				
1312	FMR1	NM_002024.1	2029	cgcctgcgcacgggtaaagatcg	47939	473845	see also 1297 line				
1313	FMR1	NM_002024.1	2034	gcgcacgggtaaagatcgtaacc	47940	473846	see also 1297 line				
1314	FMR2	NM_002025.1	642	tacaaggtagctgaatatatacaaa	314729	685592	-			mental retardation(精神遅滞)	

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1315	FNTA	NM_002027.1	213	agcgaatggcgtgatagatc	216852	605143	signal_transduction	protein geranylgeranyltrans- ferase	-
1316	FYN	NM_002037.3	1717	tacatcagcgcgcgaattatat	83894	502856	kinase_related transcription_regulat	-	-
1317	GABPB2	NM_002041.2	615	atgaagatttagcagagatat	4346	668921	or	-	-
1318	GABPB2	NM_002041.2	627	cagagattattcagattgctatg	4347	668922	see also 1317 line	-	-
1319	GALK2	NM_002044.1	523	aggtggaactgcagaaatcgt	83993	502940	kinase_related	galactokinase	-
1320	GARS	NM_002047.1	1118	tgcggatcttttttgaaactata	84037	805196	-	glycine-tRNA	-
1321	GARS	NM_002047.1	1120	cggatcttttttgaaactataat	84038	805197	see also 1320 line	-	-
1322	GATA1	NM_002049.2	317	tacagacactcccccagctttcca	4411	444323	transcription_regulat	translation regulator	F-cell production(F細胞産生)、hereditary persistence of fetal hemoglobin(遺伝性高胎児ヘ モグロビン血症)
1323	GATA1	NM_002049.2	319	cagacactccccagcttttcagg	4412	444324	or	-	-
1324	GATA3	NM_002051.1	1204	cagacccctgactatgaagaagg	4427	444353	-	translation	-
1325	GATA4	NM_002052.2	1118	ccgacaccccccaatctgatattg	4430	696689	transcription_regulat	translation regulator	-
1326	GATA4	NM_002052.2	1122	caccocaaatctgatatttga	4431	696691	see also 1325 line	-	-
1327	GATA4	NM_002052.2	1124	ccccaatctgatatttggacg	4432	696692	see also 1325 line	-	-
1328	GCG	NM_002054.2	392	atgtcgaaggagacctttaccagt	169830	566635	signal_transduction	peptide hormone	-
1329	GFPT1	NM_002056.1	442	gccaccccccagcgcctctgataaa-	174605	568492	-	sugar binding	-
1330	GFPT1	NM_002056.1	444	cacccccagcgcctctgataaaa	174606	568493	see also 1329 line	-	-
1331	GFPT1	NM_002056.1	447	cccagcgcctctgataaaaaata	174608	568494	see also 1329 line	-	-
1332	GFPT1	NM_002056.1	448	cccagcgcctctgataaaaaataat	174609	568495	see also 1329 line	-	-
1333	GFPT1	NM_002056.1	635	taccttggtgagagagattatcc	174618	568499	see also 1329 line	-	-
1334	GFPT1	NM_002056.1	1351	cagctcttcgagatgatgttgc	174635	568519	see also 1329 line	-	-
1335	GNA15	NM_002068.1	572	gccaggacccctataaagtgacc	109115	519449	gpcr、 signal_transduction	signal transducer	-
1336	GNAL	NM_002071.1	533	ttgtttcagcaatgagtagtata	109187	639017	signal_transduction	-	-
1337	GNAL	NM_002071.1	619	gccctatcactgactttgaata	109190	639021	see also 1336 line	-	schizophrenia(精神分裂病)
1338	GNAZ	NM_002073.1	990	cgcaccgcacaccagtaacatcc	109265	519565	signal_transduction	receptor signaling protein	-
1339	GNB3	NM_002075.2	749	egggggctggacaacatgtgttcc	192288	586103	gpcr、 signal_transduction	signal transducer	atherosclerosis(粥状硬化症)、coronary artery disease(冠動脈疾患)
1340	GNS	NM_002076.1	688	gtggacttaactgacagatgtttt	200514	592176	-	N- acetylglucosamine- 6-sulfatase	mucopeptidase(mucopolysaccharidosis(ムコ多糖体症)、 SanFilippo syndrome(サンフィリッポ症候群))
1341	GOLGA1	NM_002077.1	565	tgttgacacaggtccgaaacttgc	321565	686125	-	-	-
1342	GOLGA1	NM_002077.1	576	tccgaacttcgagaagataaaa	321566	686126	see also 1341 line	-	-
1343	GOLGA1	NM_002077.1	637	ttccatgcggaaatttcaagagc	321567	686131	see also 1341 line	-	-
1344	GOLGA4	NM_002078.2	1328	tgcgtgatgcaagaagacttaatt	305552	686188	-	-	-
1345	GOLGA4	NM_002078.2	1329	gcgtgatgcaagaagacttaattg	305553	686189	see also 1344 line	-	-

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1346	GOT1	NM_002079.1	799	aagaacttcgggctctacaatga	218012	605957	-	aspartate aminotransferase	-
1347	GPRK6	NM_002082.1	83	agcgaacacgfgtctactcaagg	84283	503163	gpcr、 kinase_related、 signal_transduction	G-protein-coupled receptor phosphorylating protein kinase	-
1348	GRB2	NM_002086.2	358	atggaagccatcccaaatatga	252679	535704	-	SH3/SH2 adaptor protein	-
1349	GRB2	NM_002086.2	363	agccatgcgaataatgacttca	252681	535705	see also 1348 line	-	-
1350	GRB2	NM_002086.2	367	atcgcgaatgatgacttcaaacg	252682	535706	see also 1348 line	-	-
1351	GRB2	NM_002086.2	963	cgggaatgtttcccccgaattatg	252691	535724	see also 1348 line	-	-
1352	GRB2	NM_002086.2	964	ggcgaatgtttcccccgaattatg	252692	535725	see also 1348 line	-	-
1353	GRIK5	NM_002088.3	345	tccaccgtgagccatatctgtgg	244594	632447	receptor_activity、 channel	potassium channel	-
1354	GRIK5	NM_002088.3	734	gggaatgacctcagcggtttaca	244595	632451	see also 1353 line	-	-
1355	GRIK5	NM_002088.3	743	ctcagcggttttacaagttacatcc	244596	632453	see also 1353 line	-	-
1356	GRSF1	NM_002092.1	1125	aagccaatgccccagacattata	47970	484473	-	mRNA binding	-
1357	GSK3B	NM_002093.2	1479	gagaccgtggacagaccaataat	84399	503248	kinase_related、 signal_transduction	protein kinase CK2	schizophrenia(精神分裂病)
1358	GTF2E2	NM_002095.3	956	ctgaagcgacagaggtatttttc	275509	657965	transcription_regulat or	general RNA polymerase II transcription factor	-
1359	HAL	NM_002108.2	1620	aggaaacttcattcgtggaatacc	232329	617276	-	histidine ammonia- lyase	histidinemia(ヒスチジン血症)
1360	HCK	NM_002110.2	999	ctggatggccaccctacaacaagc	84739	503424	kinase_related	protein tyrosine kinase	-
1361	HDC	NM_002112.1	1201	cggctccttcgggggtgaagaatct	233837	618212	-	histidine decarboxylase	-
1362	HIVEP1	NM_002114.1	941	aactgagcacctgttcacaaaag	28333	460093	transcription_regulat or	DNA binding	-
1363	HIVEP1	NM_002114.1	5567	ccccagcaaatagtttagacatt	28439	460194	see also 1362 line	-	-
1364	HIVEP1	NM_002114.1	5568	ccccagcaaatagtttagacattg	28440	460195	see also 1362 line	double-stranded DNA binding	leukemia(白血病)
1365	HLF	NM_002126.3	700	ttccctatgacgagagatacttcc	19948	460242	transcription_regulat or	-	-
1366	HLF	NM_002126.3	939	ttgcagcaaacgcacatacaccc	19950	460245	see also 1365 line	-	-
1367	HMGCS1	NM_002130.3	895	ttggttcattgatctttcactca	216522	603756	-	-	-
1368	HNRPD	NM_002138.2	658	gactgcactctgaagttagatcc	28567	460315	transcription_regulat or	-	-
1369	HNRPD	NM_002138.2	667	ctgaagtttagatcctatcacagg	28569	460316	see also 1368 line	-	-
1370	HNRPD	NM_002138.2	726	atcggagagtgtagataaaggta	28571	460317	see also 1368 line	-	-
1371	HOXB5	NM_002147.2	121	gcccggactatcagttgctaatt	5121	444755	transcription_regulat or	transcription factor	-
1372	HOXB5	NM_002147.2	122	cccggactatcagttgctaatt	5122	444756	see also 1371 line	-	-
1373	HOXB5	NM_002147.2	123	ccggactatcagttgctaatta	5123	444757	see also 1371 line	-	-



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1374	HOXB5	NM_002147.2	124	cgagctatcatgttgtaaatat	5124	444758	see also 1371 line		
1375	HOXB5	NM_002147.2	199	ccggctcttacgctacaaattac	5126	444759	see also 1371 line		
1376	HOXB5	NM_002147.2	203	ctcttacgctacaaattacaaatg	5128	444760	see also 1371 line		
1377	HOXB5	NM_002147.2	453	agcgcaatttcacgcgaataaga	5129	444761	see also 1371 line	RNA polymerase II	
1378	HOXD10	NM_002148.2	123	gcctgcaggagtgacagttttta	5211	444854	transcription_regulat or	transcription factor	-
1379	HOXD10	NM_002148.2	312	ccgaacagatcttgcgaataga	5219	444862	see also 1378 line		
1380	HOXD10	NM_002148.2	410	ttctgataagcgcaacaactca	5222	444866	see also 1378 line		
1381	HOXD10	NM_002148.2	412	ctgataagcgcaacaactcatt	5223	444867	see also 1378 line		
1382	HOXD10	NM_002148.2	539	caccgggaaaccccaagagtaca	5227	444869	see also 1378 line		
1383	HRC	NM_002152.1	2192	tccaggagctacgttgactatt	146738	661291	-	calcium ion binding	-
1384	HSPA4	NM_002154.3	1178	aactatgaatagaggcaaatctc	85188	503887	-	-	-
1385	TNC	NM_002160.1	6781	gagatatggggacaataaccaca	181468	662332	-	AP-1(c-Jun homodimer)	-
1386	IARS	NM_002161.2	468	ctgagtggaagtctactgttagc	85465	501152	-	-	autoimmune polymyositis/dermatomyositis(多腺 性皮膚筋炎自己免疫病)
1387	ICSBP1	NM_002163.1	1120	cccccttgctgcctcaactcatt	323	444951	transcription_regulat or	hematopoietic- associated factor	
1388	ICSBP1	NM_002163.1	1121	cccccttgctgcctcaactcattc	324	444952	see also 1387 line	1B complex	arthritis(関節炎)
1389	ICSBP1	NM_002163.1	1122	cccccttgctgcctcaactcattct	325	444953	see also 1387 line		
1390	IDH2	NM_002168.2	446	ggcccgctgtggaagagtgcaagc	220281	782259	-	isocitrate dehydrogenase (NADP+)	-
1391	IDH2	NM_002168.2	605	cggccatggcgccagctacaagg	220282	782261	see also 1390 line		
1392	IL1RAP	NM_002182.2	1684	ggggcaacataaagctaatatta	123185	527748	receptor_activity	-	-
1393	IL1RAP	NM_002182.2	1760	gacggctgcacggctcattaaat	123187	527749	see also 1392 line		
1394	IL1RAP	NM_002182.2	1762	cggctgctcacggctcattaaatgg	123188	527751	see also 1392 line		
1395	IL6ST	NM_002184.2	2309	atggcgaatttcactgatgtaagt	124044	631943	receptor_activity、 signal_transduction	-	-
1396	IL7R	NM_002185.2	911	cagttcccgatcataagaaga	123933	631974	receptor_activity、 signal_transduction	interleukin-7 receptor	-
1397	IL7R	NM_002185.2	996	ttctggagctgccaggttcattag	123935	631980	see also 1396 line		
1398	INHA	NM_002191.2	1178	atggagggttactctttcaagtat	131888	535887	cell_cycle、 apoptosis、 signal_transduction	hormone	-
1399	INHA	NM_002191.2	1179	tggagggttactctttcaagtatg	131889	535888	see also 1398 line		
1400	ACO1	NM_002197.1	481	atcattccatccaggttgatttc	49588	471537	-	aconitate	-
1401	ACO1	NM_002197.1	506	cagaaggcgacaggtttcacaga	49589	471539	see also 1400 line		
1402	IRF1	NM_002198.1	238	tgcagattaattccaacaaatc	5452	697282	transcription_regulat or、cell_cycle	translation regulator	small cell lung cancer(肺癌)、arthritis(関節炎)、 myelodysplastic syndrome(骨髓異形成症候群)
1403	ISL1	NM_002202.1	366	tttgaatgtcgaggagtgtaatca	5572	445109	-	RNA polymerase II	
1404	ISL1	NM_002202.1	371	atgtcgaggagtgtaatcagttatt	5573	445110	see also 1403 line	transcription factor	diabetes mellitus(糖尿病)、diabetes(糖尿病)

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1405	ISL1	NM_002202.1	373	gtcggagtgtaatacagatttg	5574	445111	see also 1403 line		
1406	ISL1	NM_002202.1	1260	agcatgtagcagctcattga	5589	445123	see also 1403 line		
1407	ITGA7	NM_002206.1	870	gaccagctggtataaaacttt	249277	635800	receptor_activity、 signal transduction	cell adhesion receptor	myopathy(ミオパシー)
1408	ITGA7	NM_002206.1	871	accagctggtataaaactttg	249278	635801	see also 1407 line		
1409	ITGA7	NM_002206.1	1178	gggtgccctactcttcttgagc	249282	635807	see also 1407 line		
1410	ITIH2	NM_002216.1	468	aactgtggccgagctctttatg	292837	662737	-	serine protease inhibitor	-
1411	ITPR1	NM_002222.1	926	atgaatgagtgatacaaaaga	247242	636183	channel、 receptor_activity、 signal transduction	inositol-1、4、5- triphosphate receptor	-
1412	ITPR1	NM_002222.1	1490	aaggaacattgccaatgttc	247251	636189	see also 1411 line		
1413	ITPR1	NM_002222.1	5310	tggtaacccgttactatgaaac	247311	636254	see also 1411 line		
1414	ITPR1	NM_002222.1	5798	gagcccaacacacagataaaga	247316	636264	see also 1411 line		
1415	ITPR1	NM_002222.1	6573	atcagttgctcgccatacaaaa	247333	636276	see also 1411 line		
1416	ITPR1	NM_002222.1	6580	ggctcgccataaacaagaacttc	247335	636278	see also 1411 line	protein tyrosine kinase	-
1417	JAK1	NM_002227.1	682	atcagctacaagcgatatattcc	86052	504619	kinase_related		
1418	JAK1	NM_002227.1	692	agcatatattccagaacaattg	86054	504620	see also 1417 line		
1419	JAK1	NM_002227.1	1114	atccgggaagagtggaacaattt	86068	504635	see also 1417 line		
1420	JAK1	NM_002227.1	1115	tcgggaagagtggaacaattt	86069	504636	see also 1417 line		
1421	JAK1	NM_002227.1	1443	ctgcacgcgacttggaacaattc	86076	504646	see also 1417 line		
1422	JAK1	NM_002227.1	3019	ttgggtctcggcaatacgttca	86100	504675	see also 1417 line		
1423	JAK1	NM_002227.1	3117	agcaattgaacgcgataaggagt	86103	504676	see also 1417 line	transcription_regulat Smad3/Sp-1	-
1424	JUN	NM_002228.2	1942	tgtaacgcagcagcttgcaaaa	5608	445136	or	heterodimer	-
1425	KCNA3	NM_002232.2	1792	ctctgagtaagtcggagtatatg	132263	536241	channel	protein binding	-
1426	KCNA3	NM_002232.2	1796	gagtaagtcggagtatatggga	132264	536242	see also 1425 line		
1427	KCNA4	NM_002233.2	1787	ttgaccttgcgcaatgagtat	132272	536255	channel	voltage-gated potassium channel	-
1428	KCNA4	NM_002233.2	1789	gaccttgcgcaatgagtat	132273	536256	see also 1427 line		
1429	KCNA4	NM_002233.2	1791	cccttgcgcaatgagtat	132274	536258	see also 1427 line		
1430	KCNA4	NM_002233.2	1913	aggagtgagttctatcaagt	132276	536262	see also 1427 line		
1431	KCNA4	NM_002233.2	2783	gtgccattgcgggtcttaacc	132282	536277	see also 1427 line		
1432	KCNA4	NM_002233.2	3065	cagataaaaacaactgtctaat	132287	536284	see also 1427 line		
1433	KCNA6	NM_002235.2	2120	tacaatgaccacggtaggtacg	132296	536315	channel	voltage-gated potassium channel	-
1434	KCNJ3	NM_002239.2	196	atgtctgcactccgaaggaatt	260520	644151	channel、gpcr	G-protein activated inward rectifier potassium	-
1435	KCNJ3	NM_002239.2	210	aaggaaattggggagcagattac	260521	644153	see also 1434 line		
1436	KCNJ3	NM_002239.2	944	aactgagtagtttagtagaca	260529	644162	see also 1434 line		
1437	KCNJ3	NM_002239.2	946	ctggatgtagtttagtagacag	260530	644163	see also 1434 line		
1438	KCNJ3	NM_002239.2	1053	aagcatgcaaacactgaacagctcg	260535	644165	see also 1434 line		

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1439	KCNMA1	NM_002247.2	802	ttctacaagatttcacattaca	29330	460716	-	-
1440	KCNMA1	NM_002247.2	1008	gagactgatacagtttttcagaaa	29335	460723	see also 1439 line	-
1441	KCNMA1	NM_002247.2	1076	tggatgaatctgctctcatattt	29336	460727	see also 1439 line	-
1442	KCNMA1	NM_002247.2	1585	gtctctaatccacatgatcttgc	29349	460748	see also 1439 line	-
1443	KCNMA1	NM_002247.2	2359	atgagcagatcacccctgttaatt	29364	460763	see also 1439 line	-
1444	KCNMA1	NM_002247.2	2718	gccattaaagtgggtgatttaa	29377	460771	see also 1439 line	-
1445	KCNMA1	NM_002247.2	2760	ctgtgacatgtgcgttatctgt	29378	460772	see also 1439 line	-
1446	KCNMA1	NM_002247.2	2784	agccaatcagaataatattgatg	29381	460774	see also 1439 line	-
1447	KCNMA1	NM_002249.3	1213	ttgttttatgtgatagagacc	121614	526743	channel	schizophrenia(精神分裂病)
1448	KCNMA1	NM_002252.3	824	gtcgtctctgtttgagaagagc	132593	536544	channel	-
1449	KIF3C	NM_002254.4	811	ccgtgagggccctgatagatcc	87656	505878	-	motor
1450	KPNA1	NM_002264.1	1090	tagcccaaggaatctatcaaaa	133274	651337	-	protein transporter
1451	KPNA1	NM_002265.4	1560	ggctatgcccccacttaataaat	157168	651515	-	zinc binding
1452	KPNA1	NM_002265.4	2253	gggttggtgaatttcctcaagtaca	157183	651533	see also 1451 line	-
1453	KPNA1	NM_002265.4	2593	gacatgtggtgattatctgaatga	157196	651546	see also 1451 line	-
1454	KPNA3	NM_002267.2	754	tgggtttttaccatctctgtgca	177061	651364	-	protein transporter
1455	KPNA3	NM_002267.2	1075	cacatgtggtcattgtcaatctct	177065	651372	see also 1454 line	-
1456	KPNA4	NM_002268.3	328	gacacacacagggctcaagaattt	269321	651402	-	protein transporter
1457	KPNA4	NM_002268.3	375	gactatgagaagacacacgaatg	269324	651409	see also 1456 line	-
1458	KPNA4	NM_002268.3	398	aagttgtgtgattgaattaaagag	269326	651411	see also 1456 line	-
1459	KPNA4	NM_002268.3	495	tgggtatctagagtgcaaaaata	269331	651417	see also 1456 line	-
1460	KPNA4	NM_002268.3	508	gtgcaaaatacctctcttagaagc	269332	651418	see also 1456 line	-
1461	KPNA4	NM_002268.3	516	tacctcttagaagctattttt	269333	651419	see also 1456 line	-
1462	KPNA4	NM_002268.3	1601	tcgtatgagctaatgaatatata	269355	651447	see also 1456 line	-
1463	KPNA4	NM_002268.3	1604	atggactaatgaatatataaaa	269356	651448	see also 1456 line	-
1464	KPNA2	NM_002270.2	1516	cacgtacotgaagccattataga	177117	803341	-	-
1465	KPNA2	NM_002270.2	1639	tccttacctgtcttatatttg	177122	803350	see also 1464 line	-
1466	KPNA3	NM_002271.3	3272	ttcttggcccaacacataccaat	127655	651569	-	protein transporter
1467	LAMB1	NM_002291.1	643	ttgtcccaacccgcttaagatt	291166	661616	-	structural molecule
1468	LAMB1	NM_002291.1	644	tgctccaaacccgcttaaatatt	291167	661617	see also 1467 line	-
1469	LAMB1	NM_002291.1	1025	taccaactgagaatcaagtttg	291179	661629	see also 1467 line	-
1470	LAMB2	NM_002292.2	1604	ggccagtgctgctcaagaagaca	291279	549211	-	structural molecule
1471	LAMB1	NM_002293.2	904	aggccctgtgactgatgaattc	291344	661732	-	structural molecule
1472	LAMB1	NM_002293.2	2845	gcctgaagtgcattcataaact	291381	661760	see also 1471 line	-
1473	LBR	NM_002296.2	1325	tggatgggtggttattaaactgg	30204	484876	receptor activity	hydrops-ectopic calcification-moth-eaten skeletal dysplasia(異所石灰化骨異形成症)
1474	LCPI	NM_002298.2	855	ctgtggcgaagtcatcaagattgg	117912	523294	-	Pelger-Huet anomaly(ペルジャー・ヒュエット核異)
1475	LIFR	NM_002310.2	3235	tacagacctcaggccaatgtaaa	243815	632075	receptor activity, signal transduction	non-hodgkin lymphoma(非ホジキンリンパ腫)
1476	LIFR	NM_002310.2	3379	gactctctaaatcaatggagg	243826	632079	see also 1475 line	-
1477	LIFR	NM_002310.2	3399	aggaggggtggtcctttacaact	243827	632081	see also 1475 line	-
1478	LIFR	NM_002310.2	3401	gagggtggtcctttacaacttt	243828	632082	see also 1475 line	-
1479	LIFR	NM_002310.2	3402	agggtggtcctttacaactttt	243829	632083	see also 1475 line	-

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1480	LIG3	NM_002311.2	449	gtgtgggggtgtatgaagaagt	30543	461199	-	-	-	
1481	LIG3	NM_002311.2	451	ctgggggtgtatgaagaagtgg	30544	461200	see also 1480 line			
1482	LIG3	NM_002311.2	1597	agcaggtccagggtgataagaat	30570	461228	see also 1480 line			
1483	LIG3	NM_002311.2	1939	accggatcatcttcacagaatg	30576	461237	see also 1480 line			
1484	LIG4	NM_002312.2	282	ctcacaacttcacaaactgttg	30599	508500	DNA ligase (ATP)	-		
1485	ABLIM1	NM_002313.4	675	accggagacccgagtcacattca	115022	521125	-	-		
1486	ABLIM1	NM_002313.4	1213	atctatgcaaaagttagacaatga	115044	521145	see also 1485 line			
1487	ABLIM1	NM_002313.4	1237	atctgtgattacaaggattagc	115045	521146	see also 1485 line			
1488	ABLIM1	NM_002313.4	1614	cgtcaggcccttaaacatttcc	115058	521151	see also 1485 line			
1489	LIMK1	NM_002314.2	786	ctgcatgagcccgatgtgaaga	88511	508595	kinase-related, signal_transduction	-	Williams-Beuren syndrome(ウィリアムズ症候群)	
1490	LOX	NM_002317.3	1354	tgccagtggtgatgtattacaga	163087	560801	-	protein-lysine 6- oxidase	-	
1491	LRP1	NM_002332.1	2291	gtggaactggatgggagacaatct	147393	549320	receptor activity	receptor	atherosclerosis(粥状硬化症)、Alzheimer disease(アルツハイマー病)	
1492	LRP1	NM_002332.1	2436	cactcaatgggtggatgtactgg	147403	549326	see also 1491 line			
1493	LRP1	NM_002332.1	3150	gccctcgggaccgattcaagtc	147411	549337	see also 1491 line			
1494	LRP1	NM_002332.1	5189	aacaccactgctatgagtttaa	147432	549359	see also 1491 line			
1495	LRP1	NM_002332.1	5191	caccacctgctatgagtttaaga	147433	549360	see also 1491 line			
1496	LRP1	NM_002332.1	7695	accgtatgtgctcctaaagtca	147454	549403	see also 1491 line			
1497	LRP1	NM_002332.1	9663	accgagagcagatgactactgg	147473	549426	see also 1491 line			
1498	LRP1	NM_002332.1	12718	cagcaaacgagggcctaagtcacc	147503	549463	see also 1491 line			
1499	LRP6	NM_002336.1	170	gcgattggttgatgctacaatg	133382	636400	receptor activity、 signal_transduction	-		
1500	LRP6	NM_002336.1	236	agctgcgggtggacttctg:itta	133384	636402	see also 1499 line			
1501	LRP6	NM_002336.1	288	agcgaagaagccattaaacgaac	133386	636404	see also 1499 line			
1502	LRP6	NM_002336.1	486	tggatcaaccaccagagctattgc	133396	636412	see also 1499 line			
1503	LRP6	NM_002336.1	754	atccttttgccttgacgttattt	133405	636425	see also 1499 line			
1504	LRP6	NM_002336.1	755	tcctttgcttgacgttattt	133406	636426	see also 1499 line			
1505	LRP6	NM_002336.1	949	gggtgtttccatttgtttg	133411	636437	see also 1499 line			
1506	LRP6	NM_002336.1	979	cagtcgaagccttttattcagtg	133413	636439	see also 1499 line			
1507	LRP6	NM_002336.1	2544	ctcaacagtgaaagttagacaaga	133485	636484	see also 1499 line			
1508	LRP6	NM_002336.1	2907	atcaacccgcttggttgatga	133493	636488	see also 1499 line			
1509	LRP6	NM_002336.1	3369	ttaagtggtcttaagtaaaccaat	133505	636505	see also 1499 line			
1510	LRP6	NM_002336.1	3437	ttaagatctcgcgaattgaaa	133508	636508	see also 1499 line			
1511	LRP6	NM_002336.1	3439	cagatctcggcgaaattgaaagc	133509	636509	see also 1499 line			
1512	LRP6	NM_002336.1	3543	tggctatttgattgataaaca	133513	636517	see also 1499 line			
1513	LSAMP	NM_002338.1	83	ctgttcgacgttgattttaac	319178	789881	-	-		
1514	LSAMP	NM_002338.1	609	ctctcggcggtgtcaacaag	319187	789890	see also 1513 line			
1515	LSAMP	NM_002338.1	610	tcctcggcggtgtcaacaagt	319188	789891	see also 1513 line			
1516	LSAMP	NM_002338.1	612	ctcggcggtgtcaacaagtcga	319189	789892	see also 1513 line			
1517	LSAMP	NM_002338.1	615	ggcggtgtcaacaagtcgaag	319190	789893	see also 1513 line			
1518	LY75	NM_002349.1	1585	gagaaactgttacaaagtattat	175337	568835	receptor activity	-		
1519	LY75	NM_002349.1	3551	cagtcgaagtgtgaactcaact	175411	568903	see also 1518 line			

1520	LY75	NM_002349.1	3980	ttcatgggtcatgtttaggaataa	175426	568916	see also 1518 line		
1521	LY75	NM_002349.1	4410	tggttggtgctcctcaagtcata	175434	568929	see also 1518 line		
1522	TACSTD1	NM_002354.1	599	acctactggatcatcatgaact	327545	697557	-	-	
1523	MAD	NM_002357.1	315	tagcagatcaactcacaatgaaa	6240	461316	transcription_regulat or	transcription factor	-
1524	MAFG	NM_002359.1	639	accagcgtcatcacaatagtaaa	6311	461365	transcription_regulat or	p18(MAFG)/p45 heterodimer	-
1525	MAN2A1	NM_002372.1	1173	gtgtgggatattatagatattc	201035	592687	-	mannosyl- oligosaccharide 1, 3-1, 6-alpha-	-
1526	MAP2	NM_002374.2	432	gggtcacagggcaccattcaaa	121650	526775	-	mannosidase	-
1527	MAP2	NM_002374.2	521	tgcaggatagttcaagtagtca	121655	526780	see also 1526 line	-	-
1528	MAP2	NM_002374.2	5223	cagcttggctatttaacaaacc	121754	526866	see also 1526 line	-	-
1529	MARK3	NM_002376.3	2201	aacggcgaaaccgaacataaat	90304	507995	kinase_related	protein tyrosine kinase	-
1530	MARK3	NM_002376.3	2203	cggcgaaaccgaacataatgg	90305	507997	see also 1529 line	-	-
1531	MATK	NM_002378.2	1551	aagtcggatgtctggagtttgg	90429	508071	kinase_related, cell_cycle	-	-
1532	MATN1	NM_002379.2	1262	acggcaagaccctgcaatgtctgc	288884	686504	-	extracellular matrix structural constituent	rheumatoid arthritis(関節リウマチ)
1533	MATN1	NM_002379.2	1646	gccgagccagcagcactaatat	288887	686510	see also 1532 line	-	-
1534	MATN2	NM_002380.2	2081	cccaattgacctgtcttcttga	148148	706641	-	-	-
1535	MAX	NM_002382.3	256	atgcactggaacgaaaaacgtagg	6315	445426	-	-	-
1536	MDM2	NM_002392.1	482	tgcccaagtattatgactaaac	233223	537472	transcription_regulat or, cell_cycle	-	Well-differentiated liposarcoma(高分化型脂肪肉腫)、rhabdomyosarcoma(胞巣状横紋筋肉腫)、liposarcoma(脂肪肉腫)、chondrosarcoma(軟骨肉腫)、osteosarcoma(骨髄性骨肉腫)、ovarian cancer(原発性卵巣癌)、leukemia(白血病)、testicular cancer(睾丸癌)、nerve sheath tumors(髄鞘腫瘍)、astrocytic tumors(星状腫瘍)
1537	MDM2	NM_002392.1	1202	ttccttagctgactattggaat	233232	537476	see also 1536 line	-	-
1538	MDM4	NM_002393.1	760	atggctcaactgatttacagaca	308821	690336	apoptosis, transcription_regulat or	protein binding	-
1539	MDM4	NM_002393.1	794	gggtactgccattgtttcagata	308823	690337	see also 1538 line	-	-
1540	MDM4	NM_002393.1	1062	agcaagaagtactgttttcgttg	308829	690346	see also 1538 line	-	-
1541	ME2	NM_002396.2	829	gccggaacacacactcattcagttc	220867	608008	malate dehydrogenase (oxaloacetate decarboxylating)	-	-
1542	MEF2C	NM_002397.2	926	ttctctgcagagaagaatagtatgt	6397	445447	transcription_regulat or	translation regulator	-

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1543	MEF2C	NM_002397.2	1253	ctccagctggcctcagctatgg	6405	445459	see also 1542 line		
1544	MEF2C	NM_002397.2	1290	tccttgagcaactcactattacc	6406	445461	see also 1542 line		
1545	MEIS1	NM_002398.1	117	ggcctccctccacagatgatgg	6409	441268	transcription_regulat or	RNA polymerase II	transcription factor -
1546	MEIS1	NM_002398.1	194	tcctctgcaactgcctcagtagcc	6410	441269	see also 1545 line		
1547	MEIS1	NM_002398.1	262	ctgctcaatgacgttttaaaaga	6411	441271	see also 1545 line		
1548	MEIS1	NM_002398.1	270	gacgttttaaaagagagataaga	6413	441272	see also 1545 line		
1549	MEIS1	NM_002398.1	398	ctgctctgagagtcattcaatg	6414	441274	see also 1545 line		
1550	MEIS1	NM_002398.1	401	ctctcagagtcattcaatgaag	6415	441276	see also 1545 line		
1551	MEIS1	NM_002398.1	444	cagattgcgcagaaaaacctct	6419	441283	see also 1545 line		
1552	MEIS1	NM_002398.1	598	aagggaataatgcctatcgattg	6421	441291	see also 1545 line		
1553	MEIS1	NM_002398.1	608	gcctatcgatttggtgatagcg	6422	441292	see also 1545 line		
1554	MEIS1	NM_002398.1	671	aagatcagcaaatctaaactgacc	6423	441296	see also 1545 line		
1555	MEIS1	NM_002398.1	867	aaggacaaaaagcgtcacaaaa	6425	441299	see also 1545 line		
1556	MEIS2	NM_002399.2	1830	agcacagagcccccacaaatgtaa	6459	445968	transcription_regulat or	-	-
1557	MGAT2	NM_002408.2	490	atgaggttcgcctcctcacaacg	210571	759589	-	transferring glycosyl groups	carbohydrate-deficient glycoprotein syndrome(-)
1558	MGAT2	NM_002408.2	1055	caggtagtgccctagagattgt	210580	759598	see also 1557 line		
1559	MGAT2	NM_002408.2	1620	ctggtgatgcatacaagaataa	210597	759614	see also 1557 line		
1560	MGAT2	NM_002408.2	1658	ctcagagtgcccaattgagtcga	210599	759616	see also 1557 line		
1561	MGAT3	NM_002409.3	249	gagacgtctacaagctctttctca	210498	701591	-	transferring glycosyl groups	-
1562	MGAT3	NM_002409.3	251	gacgtctacaagctctttctcatg	210499	701592	see also 1561 line		
1563	MMP1	NM_002421.2	739	ctcttgagactctccattctact	148441	558789	-	Ap-1(c-Jun/c-Fos heterodimer)	chondrosarcoma(軟骨肉腫)、epidermolysis bullosa dystrophica(栄養障害性表皮水疱症)、 melanoma(メラノーマ)
1564	MMP13	NM_002427.2	1365	gaccatacagatttgaatacagc	148544	550267	-	zinc binding	-
1565	MMP15	NM_002428.1	1430	tcacctatgaccgattgacacg	158130	558671	-	zinc binding	-
1566	MNAT1	NM_002431.1	206	ttcagggtacaactctttgaaga	158436	669139	cell cycle, kinase related, transcription_regulat or	zinc binding	-
1567	MOG	NM_002433.1	1010	gggtgccctgctggaagataacc	314205	692898	-	-	-
1568	MPP1	NM_002436.2	453	tggggagatgagatcctagaatc	209380	681179	kinase related, signal transduction	guanylate kinase	-
1569	MPP1	NM_002436.2	939	ttcgctctccctgcaattcaagagg	209395	681189	see also 1568 line	-	-
1570	MRC1	NM_002438.1	2119	gtggttggaatctcgagattttt	148689	567659	receptor activity	receptor	-
1571	MRC1	NM_002438.1	2170	tgggttggaatctcgagattttt	148690	567660	see also 1570 line	-	-
1572	MRC1	NM_002438.1	3973	aagtaaaaccatttttggatag	148738	567707	see also 1570 line	-	-
1573	MRC1	NM_002438.1	4076	ccctctgtgtaacgaatgattg	148740	567708	see also 1570 line	-	-
1574	MSH5	NM_002441.2	819	cggggttgaactggaagactata	16641	451620	-	-	-

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1575	MSH5	NM_002441.2	2197	gtggcgaagacagtgacaatgc	16667	451643	see also 1574 line			
1576	MSH1	NM_002442.2	111	cgacgacccctgcaagatgttc	52801	472417	-	-		
1577	MSH1	NM_002442.2	162	aggaaggctgcgcgaatacttc	52802	472419	see also 1576 line			
1578	MSH1	NM_002442.2	311	cacgagctcgactccaacaat	52805	472423	see also 1576 line			
1579	MSH1	NM_002442.2	314	gagctcgactccaacaatga	52807	472424	see also 1576 line			
1580	MSN	NM_002444.1	866	gtcatcaagccattgacaaaaa	287497	661802	-	structural constituent of cytoskeleton	-	
1581	MYBPC1	NM_002465.1	829	aagcgcgagcttttgcaaaaat	118019	788818	-	structural constituent of muscle	-	
1582	MYBPC1	NM_002465.1	831	gagcgcagcttttgcaaaaatc	118020	788819	see also 1581 line			
1583	MYBPC1	NM_002465.1	2112	aactttgagcccaagaagatga	118067	788856	see also 1581 line			
1584	MYBPC1	NM_002465.1	2330	atgctatgtctagagattgc	118070	788859	see also 1581 line			
1585	MYBPC1	NM_002465.1	2338	gtgctaggtattgctttgaagg	118071	788860	see also 1581 line			
1586	MYC	NM_002467.2	836	accagctgcgcgaagacagc	7233	446140	transcription_regulator, cell cycle	transcription factor-7-like-2-E		mycosis Fungoides(菌状黒肉腫)、chondrosarcoma(軟骨肉腫)、non-hodgkin lymphoma(非ホジキンリンパ腫)、breast cancer(乳癌)、osteosarcoma(骨髄性骨肉腫)、Ewing's sarcoma(エーイング肉腫)、astrocytic tumors(星状腫瘍)
1587	MYC	NM_002467.2	1641	gcggaaacgacgagacagttga	7239	446146	see also 1586 line			
1588	NASP	NM_002482.2	299	tccaggaagcagctagctcttta	301258	530125	-			
1589	NASP	NM_002482.2	306	agcagctagcttttagtaaga	301260	530126	see also 1588 line			
1590	NUBP1	NM_002484.1	886	agcctacagaagatataattcaga	95171	510662	-	molecular_function unknown	-	
1591	NBS1	NM_002485.3	603	ctcatttgtgagctccaattgt	16977	690423	cell_cycle			Nijmegen breakage syndrome(Nijmegen 染色体切断症候群)、non-hodgkin lymphoma(非ホジキンリンパ腫)
1592	NDUFA6	NM_002490.2	178	acgggataaagtcgagaaaatgt	222655	610001	-	NADH dehydrogenase (ubiquinone)	-	
1593	NDUFA6	NM_002490.2	180	gggataaagtcgagaaaatgttt	222656	610002	see also 1592 line			
1594	NDUFS4	NM_002495.1	247	ttgttctgctcgcaataaacatg	222893	610140	-	NADH dehydrogenase (ubiquinone)		complex I deficiency(複合体I欠損症)、Leigh syndrome(リー症候群)
1595	NEO1	NM_002499.1	582	caggtcttccaagattaccagc	312575	683684	-	molecular_function unknown	-	
1596	NEO1	NM_002499.1	1328	ttgggtctgtgaaatcacatga	312598	683702	see also 1595 line			
1597	NEO1	NM_002499.1	1961	gtgtgtgcctacataaacaatgg	312619	683717	see also 1595 line			
1598	NEO1	NM_002499.1	2302	ctggctgtctgtgaaacttttg	312628	683728	see also 1595 line			
1599	NEO1	NM_002499.1	2485	gaccatcaaaaggagactataaac	312630	683730	see also 1595 line			
1600	NEO1	NM_002499.1	3137	ggatatacatgactgggtattga	312651	683751	see also 1595 line			
1601	NEO1	NM_002499.1	3294	aagcggactctctgataaatg	312659	683758	see also 1595 line			

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1602	NEO1	NM_002499.1	3295	agcgactctctgataaaatgc	312660	683759	see also 1595 line		
1603	NEO1	NM_002499.1	3895	tccatcattccctcgataacc	312673	683773	see also 1595 line		
1604	NEO1	NM_002499.1	4427	gactccgagagtagctgaacc	312679	683781	see also 1595 line		
1605	NEO1	NM_002499.1	4471	ggccacactggaaggactaatga	312680	683782	see also 1595 line		
1606	NEUROD1	NM_002500.1	1039	ggcccaaggccacggatcaatct	33741	462599	transcription_regulat or	translation regulator	diabetes(mellitus(糖尿病))
1607	NFIX	NM_002501.1	540	tggagtcacaatacaagaactgg	399	446675	or	translation regulator	-
1608	NFIX	NM_002501.1	591	tccgaatccggacaatcagata	400	446676	see also 1607 line		
1609	NFIX	NM_002501.1	592	cgggaatccggacaatcagatag	401	446677	see also 1607 line		
1610	NFIX	NM_002501.1	593	cgggaatccggacaatcagatagt	402	446678	see also 1607 line		
1611	NFIX	NM_002501.1	746	cagcatcaggcccaactctcc	403	446683	see also 1607 line		
1612	NFIX	NM_002501.1	1169	agcagtcgagcccgatttcaacg	405	446686	see also 1607 line		
1613	NFX1	NM_002504.3	2392	gtgtgaccatccagtatcatct	8081	446844	transcription_regulat or		
1614	NFX1	NM_002504.3	2394	gtgaccatccagtatcatctct	8082	446845	see also 1613 line		
1615	NFX1	NM_002504.3	2499	tccctgtcaccgtgtgtgataic	8085	446849	see also 1613 line		
1616	NFX1	NM_002504.3	2505	gtcacctgtgtgtgtgtgttc	8086	446851	see also 1613 line		
1617	GNMB	NM_002510.1	1189	agccaccatcaaatgttagagg	308779	567336	-		melanoma(メラノーマ)
1618	NPAS2	NM_002518.2	589	aacagcagcagcatcatctatg	8189	446914	-	transcription factor	-
1619	NPTX1	NM_002522.1	575	agcagtcagcgcgcctcaattcc	305743	697955	-	-	-
1620	NPTX2	NM_002523.1	1280	agctcagccaggttcaacatag	175569	569073	-	molecular_function unknown	-
1621	NRD1	NM_002525.1	371	cocgtctaggagcggatgaatct	184379	578252	-	nardilysin	-
1622	NRD1	NM_002525.1	473	accgatacataaattacagaat	184386	578261	see also 1621 line		
1623	NRD1	NM_002525.1	1124	gtgataatgcctcaactgattgt	184400	578267	see also 1621 line		
1624	NRD1	NM_002525.1	2570	atgtggcacagctggagatataa	184441	578297	see also 1621 line		
1625	NRD1	NM_002525.1	3207	gaccttgggtacatgtctacc	184456	578317	see also 1621 line		
1626	NRD1	NM_002525.1	3583	atgctcagcgttcatgtgttgg	184470	578322	see also 1621 line		
1627	NRD1	NM_002525.1	3771	ccctaccataaaatagtcacaa	184476	578326	see also 1621 line		
1628	NT5E	NM_002526.1	829	tgggaagtacccattcatagtc	197269	589516	-	IMP-GMP specific 5'-nucleotidase	-
1629	NTF3	NM_002527.2	702	aggaagccagccggctcaaaaac	169382	538391	apoptosis, signal_transduction	growth factor	-
1630	NUP88	NM_002532.3	80	tcttaacacagctgtgtgttc	274032	772968	-	-	-
1631	NVL	NM_002533.1	479	aggaggatggtttattgacaaa	95177	488043	-	-	-
1632	OAZ2	NM_002537.1	214	aacacccagcagcagtagtattt	149306	664356	-	ornithine decarboxylase inhibitor	-
1633	OAZ2	NM_002537.1	262	cagtctgcagggcacattgttcc	149307	664358	see also 1632 line		
1634	OAZ2	NM_002537.1	367	ctcagctcattatataaggacg	149308	664361	see also 1632 line		
1635	ODF2	NM_002540.3	410	tggcgaaccagtgtaactgtga	292164	704566	-	-	-
1636	ODF2	NM_002540.3	737	ggcggagtgctcgggtgaaacc	292132	704571	see also 1635 line		



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1637	OGDH	NM_002541.1	158	ttcaacagattgggtgtattct	225465	611870	-	oxoglutarate dehydrogenase (lipoamide)	Parkinson disease (パーキンソン病)
1638	OGDH	NM_002541.1	210	tggactagtctgaactatgtgg	225466	611871	see also 1637 line	-	-
1639	OMG	NM_002544.2	1397	ctgtctataacacacttactga	319430	683951	-	-	-
1640	OMG	NM_002544.2	2260	agctgcaactctaaactattcatc	319462	683978	see also 1639 line	-	-
1641	OPHN1	NM_002547.1	1951	gtgactgggacattgaacaatc	296846	665086	signal transduction	Rho GTPase activator	mental retardation (精神遅滞)
1642	ORC4L	NM_002552.2	223	aagaattttacgtgaagatttt	20638	463303	-	-	-
1643	ORC4L	NM_002552.2	273	ttggagtgcaagtaacaatacaaa	20641	463304	see also 1642 line	-	-
1644	ORC4L	NM_002552.2	732	gtcttaacatgtagattggatatt	20651	463312	see also 1642 line	-	-
1645	ORC4L	NM_002552.2	1130	ttggaaatctgtcttataatagc	20672	463325	see also 1642 line	-	-
1646	ORC5L	NM_002553.2	851	aacgtgatactcgcaaacgtgg	20695	510816	-	-	-
1647	ORC5L	NM_002553.2	860	ctcgcaaacctgtagagaaatt	20696	510817	see also 1646 line	-	-
1648	P2RX1	NM_002558.2	907	gtgaagacgtgtgagatctttgg	95277	510908	receptor activity, channel, apoptosis, signal transduction	ATP-gated cation channel	-
1649	P2RX1	NM_002558.2	1511	tgcctaagagggcactactacaag	95281	510915	see also 1648 line	-	-
1650	P2RY1	NM_002563.2	1092	atctcgtgtacatgttcaatt	241073	628428	receptor activity, gpcr	purinergic nucleotide receptor, G-protein coupled	-
1651	P2RY1	NM_002563.2	1094	ctcgtgtacatgttcaatttgg	241074	628429	see also 1650 line	-	-
1652	FURIN	NM_002569.2	765	gcctcgtgtacacacagatgaatg	182886	576424	-	Smad3/Sp-1 heterodimer	-
1653	FURIN	NM_002569.2	768	tcggtacacacagatgaatgaca	182887	576425	see also 1652 line	-	-
1654	PAFAH1B2	NM_002572.1	663	ctgccacgacatgtttgatttc	200164	591840	-	2-acetyl-1-alkylglycerophosphocholine esterase	-
1655	PAFAH1B2	NM_002572.1	664	tgcacgacatgtttgattttct	200165	591841	see also 1654 line	-	-
1656	SERPINB2	NM_002575.1	585	ctgggtcaagactcaaaccaaaag	183575	577403	apoptosis	Smad3/Sp-1 heterodimer	-
1657	PAK1	NM_002576.2	428	ccccagccctcccgatgagaaat	95447	511039	kinase related, apoptosis	protein tyrosine kinase	-
1658	PAK3	NM_002578.1	135	agccagcttgctctatcttcc	95493	511068	kinase related	protein tyrosine kinase	mental retardation (精神遅滞)
1659	PAK3	NM_002578.1	262	accgggaattcactggaattcc	95496	511073	see also 1658 line	-	-
1660	PAK3	NM_002578.1	1370	aaggtgaaccccttaccctaat	95519	511110	see also 1658 line	-	-
1661	PAK3	NM_002578.1	1371	aggtgaaccccttaccctaatg	95520	511111	see also 1658 line	-	-
1662	PAK3	NM_002578.1	1378	ccccctacccttaataaatacc	95521	511112	see also 1658 line	-	-
1663	PBX1	NM_002585.1	1176	gtcactcaatgggattcttacc	8968	447600	transcription_regulator or	PBX1b/PREP1 heterodimer	lymphoblastic leukemia (リンパ性白血病)
1664	PBX2	NM_002586.3	1293	caggctctggcggctcttccaat	8970	447605	transcription_regulator or	heterodimer translation regulator	lymphoblastic leukemia (リンパ性白血病)

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1665	PBX2	NM_002586.3	1299	ctggcggctctttcaatctctca	8971	447608	see also 1664 line	-	-	-
1666	PCDHGC3	NM_002588.2	610	aagcaactctttcaaacctatg	150532	744822	-	-	-	-
1667	PCDHGC3	NM_002588.2	1637	cgctatttcaataataatctgta	150557	744859	see also 1666 line	-	-	-
1668	PCDHGC3	NM_002588.2	1643	ttcacataaatctgcacaatgg	150558	744860	see also 1666 line	-	-	-
1669	PCDH7	NM_002589.2	3888	tgacacagagatgatatagtgca	149354	551398	-	-	-	-
1670	PCDH7	NM_002589.2	3892	cagaggtatgtagtgcattgca	149955	551399	see also 1669 line	-	-	-
1671	PCDH7	NM_002589.2	3894	ggagtgatagtagtgcattgaga	149956	551400	see also 1669 line	-	-	-
1672	PCDH8	NM_002590.2	3191	tcctctgcgcaggagcaattact	149984	551432	-	-	-	-
1673	PCDH8	NM_002590.2	3193	ctctgcgcaggagcaattactac	149985	551433	see also 1672 line	-	-	-
1674	PCDH8	NM_002590.2	3248	ggagctctatgagaaagtactgc	149986	551438	see also 1672 line	-	-	-
1675	PCSK2	NM_002594.2	1966	ttgacaagtggccttctcaatgacc	183096	576823	-	subtilase	-	-
1676	PTK2	NM_002595.2	869	gtctcagaatactgtatcataga	95975	511408	kinase_related, cell_cycle	protein serine/threonine kinase	-	-
1677	PTK2	NM_002595.2	1082	ttggagagggtagcatatgcaaca	95982	511412	see also 1676 line	-	-	-
1678	PTK2	NM_002595.2	1518	gacctactcaaatgaagtgttca	95992	511422	see also 1676 line	-	-	-
1679	PTK3	NM_002596.1	1608	aagacactgcctccatctctcc	96011	511450	-	-	-	-
1680	PDE4B	NM_002600.2	1305	aacctacatgatgactttagaag	197842	590150	signal_transduction	cAMP-specific phosphodiesterase	-	-
1681	PDE4B	NM_002600.2	1306	acctacatgatgactttagaaga	197843	590151	see also 1680 line	-	-	-
1682	PDE7A	NM_002603.1	221	gtggagctattctctatgacagt	197917	590389	signal_transduction	-	-	-
1683	PDE7A	NM_002603.1	629	ttgagcacttcatttagatag	197938	590408	see also 1682 line	-	-	-
1684	PDE7A	NM_002603.1	1334	acctagtgagcctttattaca	197966	590434	see also 1682 line	-	-	-
1685	PDE8A	NM_002605.1	612	tgacggctctatcagatcatcaaa	161884	561529	signal_transduction	signal transducer	-	-
1686	PDE8A	NM_002605.1	1134	caactatgttcattatcagagt	161903	561530	see also 1685 line	-	-	-
1687	PDGFRB	NM_002609.2	3140	tgccctcgcagcagagatctatgaga	96094	511603	receptor_activity, signal_transduction, kinase_related	platelet-derived growth factor receptor	leukemia(白血病)	-
1688	PDK1	NM_002610.3	721	aggaagtccatctcatcgaaaac	96124	499219	kinase_related, signal_transduction	pyruvate dehydrogenase (lipoamide) kinase	-	-
1689	PDK2	NM_002611.3	730	agctcctgtgtgacaagtattac	96143	511613	kinase_related, signal_transduction	pyruvate dehydrogenase (lipoamide) kinase	-	-
1690	PDK1	NM_002614.3	265	tagagatcaatgggtctcttgg	274109	681370	-	-	-	-
1691	PER1	NM_002616.1	2299	cccgtctgccctggccaataaagg	254746	639329	transcription_regulation	signal transducer	-	-
1692	PER1	NM_002616.1	2394	ccccggagtcggacatcatcatg	254747	639330	see also 1691 line	-	-	-
1693	PER1	NM_002616.1	2395	ccccggagtcggacatcatcatga	254748	639331	see also 1691 line	-	-	-
1694	PER1	NM_002616.1	2397	cggagtcggacatcatcatcatg	254749	639332	see also 1691 line	-	-	-
1695	PER1	NM_002616.1	2944	ggccttgggtgctccctaactac	254750	639338	see also 1691 line	-	-	-

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1696	PEX13	NM_002618.1	356	ccgcctccgtgtagatgatcttc	269721	688579	-	protein transporter	adrenoleukodystrophy(副腎脳白質ジストロフィー)、peroxisome biogenesis disorder(ペルオキシゾーム生合成障害)
1697	PEX13	NM_002618.1	357	cgcctccgtgtagatgatcttc	269722	688580	see also 1696 line	kinase_related	-
1698	PFKP	NM_002627.2	1701	atgtccgggttcgattcaacg	166453	563881	see also 1699 line	magnesium binding	-
1699	PFN2	NM_002628.2	82	cggctactcgacgcacaaatag	118724	523540	-	-	-
1700	PFN2	NM_002628.2	177	accggagaaggtttcttaccac	118730	523546	see also 1699 line	-	-
1701	PFN2	NM_002628.2	178	cgggaaggtttcttaccacacg	118731	523547	see also 1699 line	-	-
1702	PFN2	NM_002628.2	269	atggacatccggacaagaagtca	118734	523550	see also 1699 line	-	-
1703	PFN2	NM_002628.2	291	aaggtggggagagccaacatacat	118735	523551	see also 1699 line	-	-
1704	PHF1	NM_002636.3	375	gagaagtgcgccatgcttatca	9227	463476	transcription_regulation	-	-
1705	PHF1	NM_002636.3	983	cagccacaaggaccgtttcattt	9235	463483	see also 1704 line	-	-
1706	PHF1	NM_002636.3	984	agccacaaggaccgtttcatttc	9236	463484	see also 1704 line	-	-
1707	PHF1	NM_002636.3	985	gccacaaggaccgtttcatttca	9237	463485	see also 1704 line	-	-
1708	PHKA1	NM_002637.1	1017	aagcttcaggctggtatgtgtg	121925	527098	kinase_related	phosphorylase	glycogen storage disease(グリコーゲン蓄積症)
1709	PHKA1	NM_002637.1	1195	cagacaaggctcaagaataaaa	121930	527104	see also 1708 line	kinase, regulator	-
1710	PHKA1	NM_002637.1	3076	ggcttgcctccacactgattcaaat	121974	527155	see also 1708 line	-	-
1711	PHKA1	NM_002637.1	3080	tgtccactgattcaaatgtca	121975	527156	see also 1708 line	-	-
1712	PHKA1	NM_002637.1	3168	atgcagtaaaagtgagataaaa	121977	527158	see also 1708 line	-	-
1713	SERPINB5	NM_002639.1	556	gtggtaatgctgcctacttgt	293346	663068	-	serpin	-
1714	PIGA	NM_002641.1	413	ctgccattgctcagggtacatatt	210221	602076	-	-	paroxysmal nocturnal hemoglobinuria(発作性夜間ヘモグロビン尿症)
1715	PIGA	NM_002641.1	414	tgccattgctcagggtacatattt	210222	602077	see also 1714 line	-	-
1716	PIGA	NM_002641.1	498	ctctctccagccagacaagt	210227	602084	see also 1714 line	-	-
1717	PIGA	NM_002641.1	804	tgcattgttggtggataata	210241	602092	see also 1714 line	-	-
1718	PIGF	NM_002643.2	509	taggacaaacctcaaaagcatgg	209524	667568	-	-	-
1719	PIK3C2A	NM_002645.1	1171	ttagaaccaaatctccatatac	206882	597014	kinase_related	-	-
1720	PIK3C2A	NM_002645.1	1365	tgtctgggtacatgatgacttga	206888	597020	see also 1719 line	-	-
1721	PIK3C2A	NM_002645.1	1388	ctgggtacatgatgactgaatc	206889	597021	see also 1719 line	-	-
1722	PIK3C2A	NM_002645.1	1600	ctgtatacaataaaaaaccttg	206875	597031	see also 1719 line	-	-
1723	PIK3C2A	NM_002645.1	2220	atgggatgaactaatcatcttttc	206902	597057	see also 1719 line	-	-
1724	PIK3C2A	NM_002645.1	2221	tgggatgaactaatcatcttttc	206903	597058	see also 1719 line	-	-
1725	PIK3C2A	NM_002645.1	3434	aagatatgttagctttcacagatg	206935	597094	see also 1719 line	-	-
1726	PIK3C2A	NM_002645.1	3717	ctgtgtagccactatgttttag	206942	597100	see also 1719 line	-	-
1727	PIK3C2A	NM_002645.1	4406	tccacaataagctcagttattatt	206959	597126	see also 1719 line	-	-
1728	PIK3C3	NM_002647.2	2219	gtcatggacacttacgttaaaag	207250	596961	kinase_related	-	-
1729	PIK3CG	NM_002649.2	1967	aagcaattggaggcgatcatagc	207480	597475	kinase_related, signal_transduction	phosphatidylinositol 3-kinase, class III	-
1730	PIK3CG	NM_002649.2	2580	atgaactcagttcccaagttatt	207494	597492	see also 1729 line	-	-
1731	PIK3CG	NM_002649.2	2582	gaactcagttcccaagttatttc	207495	597493	see also 1729 line	-	-
1732	PIK3CG	NM_002649.2	3543	aaggatgactgtgcagtttaatt	207527	597526	see also 1729 line	-	-

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1733	PIK4CB	NM_002651.1	498	gaggctgtttgagtcacaactgt	207773	597921	-	-
1734	PIK4CB	NM_002651.1	632	tgccccagtgcttaacatgtac	207776	597925	see also 1733 line	
1735	PTX1	NM_002653.3	1128	goccaactcgggctcacaaca	9347	447766	transcription_regulat or	translation regulator
1736	PLAG1	NM_002655.1	490	gtcatctcgtgtgattgtcaga	9406	709773	transcription_regulat or	lipoblastoma(脂肪芽細胞腫)、pleiomorphic adenoma gene(多態性アデノーマ)
1737	PLAG1	NM_002655.1	497	ctgtgtttgtcagaagtaaga	9407	709774	see also 1736 line	
1738	PLAGL2	NM_002657.2	312	aagtgaagtccaatgtgaatt	9447	707462	transcription_regulat or	translation regulator
1739	PLAGL2	NM_002657.2	390	cagcagagaccatatactgc	9451	707465	see also 1738 line	
1740	PLAGL2	NM_002657.2	1230	agcttgatocctcactacttg	9460	707471	see also 1738 line	
1741	PLCG2	NM_002661.1	2076	gagtcgaagccgtgtactatga	151188	590823	signal_transduction	signal transducer
1742	PLCG2	NM_002661.1	3447	ttcaagcagcaggtgtgaatga	151201	590846	see also 1741 line	
1743	PLD2	NM_002663.2	758	gtgcccagagcacaagttgttat	197474	589897	signal_transduction	phospholipase D
1744	PLEK	NM_002664.1	579	tcgccaggaaggcctcatgtg	151291	681438	-	calcium ion binding
1745	PLRG1	NM_002669.1	694	gacttgctagtggcaaatataa	113200	706756	transcription_regulat or	-
1746	PLRG1	NM_002669.1	1443	agctgataaaaccattaaagtat	113226	706780	see also 1745 line	
1747	PLRG1	NM_002669.1	1514	aaccagaaattatcaagagaaag	113227	706782	see also 1745 line	
1748	PMSC12	NM_002685.1	1349	cgggatgacacccattaccctgc	53417	485373	kinase_related	protein serine/threonine kinase
1749	PNN	NM_002687.2	268	aggctgattctcagatagtagg	292363	698357	-	melanoma(メラノーマ)
1750	PNN	NM_002687.2	884	ttgaagtagacgcacatcgattt	292374	698375	see also 1749 line	
1751	POLA2	NM_002689.2	1232	ttcctggacaggttgaattatg	283019	670162	-	Smad3/Sp-1 heterodimer
1752	POLB	NM_002690.1	392	gagttcatcacaatttcttga	35738	463967	-	zeta DNA polymerase
1753	POLB	NM_002690.1	520	agcgaattgggctgaataatttt	35741	463971	see also 1752 line	
1754	POLG	NM_002693.1	964	ctgttggaagagcgttactcttg	35939	464216	-	zeta DNA polymerase
1755	POU2F1	NM_002697.1	711	ctctcgcaagcgcaaaattctca	9636	447815	transcription_regulat or	translation regulator
1756	POU2F1	NM_002697.1	950	aagacgaatcaaaactggattca	9638	447820	see also 1755 line	
1757	POU2F2	NM_002698.1	926	acgtcgccttcgccttagagaag	9668	447849	transcription_regulat or	Octamer-binding transcription factor
1758	POU2F2	NM_002698.1	1195	agcaacacagttactactcttc	9670	447851	see also 1757 line	2
1759	POU4F3	NM_002700.1	113	cccgagcgtcagggtatata	9703	447885	transcription_regulat or	transcription factor deafness(型)
1760	POU4F3	NM_002700.1	114	cccgagcgtcagggtatata	9704	447886	see also 1759 line	
1761	POU4F3	NM_002700.1	115	ccgcagctcagggtatata	9705	447887	see also 1759 line	
1762	POU4F3	NM_002700.1	770	ccgcctaccgagagaagacagc	9710	447895	see also 1759 line	

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1763	PPP1CB	NM_002709.1	1034	aacgacagtggtgaaccttatt	162205	561726	-	protein phosphatase type -	-
1764	PPP1CB	NM_002709.1	1035	acgacagtggtgaaccttattt	162206	561727	see also 1763 line	-	-
1765	PPP1R3A	NM_002711.2	509	tggcagacacattatgacattt	195620	746596	phosphatase	-	diabetes mellitus(糖尿病)、diabetes(糖尿病)
1766	PPP1R3A	NM_002711.2	773	ggctgcttaaaaggtaaatcaag	195628	746608	see also 1765 line	-	-
							phosphatase、apoptosis、cell_cycle、transcription_regulat	protein phosphatase type	-
1767	PPP2CA	NM_002715.1	1025	agctgcaatcatggaacttgacg	162260	561750	or、	2C	-
1768	PPP6C	NM_002721.3	316	tagacagaggttactatagtttg	162311	561822	-	protein phosphatase type	-
1769	PPP6C	NM_002721.3	332	tagttggagaccttacttacc	162312	561823	see also 1768 line	-	-
1770	PPP6C	NM_002721.3	472	atgctaatgctggagatactgt	162319	561828	see also 1768 line	-	-
1771	PPP6C	NM_002721.3	515	cacagtgcagcctttaatagatg	162320	561833	see also 1768 line	-	-
1772	PRKAG1	NM_002733.1	796	ggggcgtgtgtggacatctact	205928	671352	kinase_related、signal_transduction	cAMP-dependent protein kinase	-
							kinase_related、transcription_regulat	cAMP-dependent protein kinase、regulator	lupus erythematosus(円板状エリテマトーデス)、thyroid cancer(甲状腺癌)、papillary Thyroid Carcinomas(副甲状腺乳頭癌)
1773	PRKAR1A	NM_002734.2	1080	ttggggccttctgattatttgg	108038	539166	or	protein kinase C	-
							kinase_related、cell_cycle、signal_transduction	protein kinase C	-
1774	PRKCA	NM_002737.1	1473	tgggatgtgcaagggaacacatga	97034	512047	apoptosis	protein kinase C	melanoma(メラノーマ)
1775	PRKCB1	NM_002738.4	1618	tggggtgacaaccaagacattct	97060	512065	kinase_related	protein tyrosine kinase	-
1776	PRKCI	NM_002740.3	877	cagtaattccatataatccttca	97228	512219	kinase_related、signal_transduction	diacylglycerol binding	-
1777	PRKCI	NM_002740.3	893	tcctcaagtcagagagtttg	97229	512220	see also 1776 line	-	-
1778	PRKCI	NM_002740.3	1339	ttcatgagcagaggaataattat	97234	512235	see also 1776 line	-	-
1779	PRKCI	NM_002740.3	1342	atgagcagaggaataattataga	97235	512236	see also 1776 line	-	-
1780	PRKCM	NM_002742.1	772	gtgtggtctgaattaccataaga	97359	512264	kinase_related	diacylglycerol binding	-
1781	PRKCM	NM_002742.1	777	gtctgaattaccataagagatgt	97361	512265	see also 1780 line	-	-
1782	PRKCM	NM_002742.1	786	accataagagatgtgcatttaa	97362	512267	see also 1780 line	-	-
1783	PRKCM	NM_002742.1	2145	ttcatcaccctgtgtgttaaat	97400	512295	see also 1780 line	-	-
1784	PRKCM	NM_002742.1	2186	acgcctgaagagagttgttgt	97401	512298	see also 1780 line	-	-
1785	PRKCM	NM_002742.1	2194	aagagttgtgtgttatggaaa	97402	512299	see also 1780 line	-	-
1786	PRKCM	NM_002742.1	2756	gactatcagacctggttagattt	97417	512310	see also 1780 line	-	-
							kinase_related、cell_cycle、signal_transduction	-	-
1787	MAPK1	NM_002745.2	821	gggctccagaaaattatgtgaat	89826	507598	apoptosis	-	-

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1788	MAPK4	NM_002747.2	1357	tggagaagatcctgaccttaac	89939	507705	kinase_related, cell_cycle	MAP kinase	-
1789	MAPK6	NM_002748.2	1281	acggatcatgagctcctcattatt	89947	507722	kinase_related, cell_cycle, signal_transduction	protein serine/threonine kinase	-
1790	MAPK7	NM_002749.2	785	cagtaactcatgactgagatgt	90011	507773	kinase_related, cell_cycle, signal_transduction	-	-
1791	MAPK8	NM_002750.2	31	agcgtgacaacaatttttatgt	90031	507786	kinase_related, signal_transduction	-	-
1792	MAPK8	NM_002750.2	353	tgcacaatcttgcgaagtgttc	90039	507798	see also 1791 line	-	-
1793	MAPK8	NM_002750.2	544	caggaaacgagtttatgacg	90047	507805	see also 1791 line	-	-
1794	MAPK8	NM_002750.2	815	tgcgtgatagcttttgagaac	90051	507812	see also 1791 line	-	-
1795	MAPK9	NM_002752.3	222	gccctcttttcgaacacaaact	90067	507824	kinase_related	-	-
1796	MAPK9	NM_002752.3	927	aagccagagatctgttatcaaa	90091	507842	see also 1795 line	-	-
1797	MAPK9	NM_002752.3	1045	ccacacacctcaaatattgatg	90095	507853	see also 1795 line	-	-
1798	MAP2K1	NM_002755.2	984	ccgacctcccatgccaattttg	88950	506747	kinase_related, signal_transduction	protein tyrosine kinase	bladder cancer(膀胱癌)
1799	MAP2K3	NM_002756.2	381	tggactcccgagacctcatcacc	88965	506758	kinase_related, signal_transduction	-	-
1800	MAP2K3	NM_002756.2	469	agcctatgggggtgtagagaagg	88966	506759	see also 1799 line	-	-
1801	MAP2K5	NM_002757.2	1593	aagacgtatgttgggaacaaatgc	89004	506835	kinase_related, signal_transduction	-	-
1802	MAP2K5	NM_002757.2	1596	acgtatgttgggaacaaatgccta	89005	506836	see also 1801 line	-	-
1803	PROX1	NM_002763.3	495	aagaggcggaactcgtatgaaga	37093	465018	-	specific RNA polymerase II	-
1804	PROX1	NM_002763.3	497	gaggcggaactcgtatgaagatg	37094	465019	see also 1803 line	transcription factor	-
1805	PROX1	NM_002763.3	498	aggcggaactcgtatgaagatgc	37095	465020	see also 1803 line	-	-
1806	PROX1	NM_002763.3	698	ccctttggcagccctactatga	37101	465026	see also 1803 line	-	-
1807	PROX1	NM_002763.3	816	gtggcattaaaggaggcaatgaaaa	37104	465027	see also 1803 line	-	-
1808	PRPS2	NM_002765.2	604	ggggagccaaaggaggttaacatca	166886	598861	kinase_related	ribose-phosphate pyrophosphokinase	hyperuricemia(高尿酸血症)
1809	PRPS2	NM_002765.2	608	agccaaaagggttacatcaattg	166888	598862	see also 1808 line	-	-
1810	PRPS2	NM_002765.2	609	gccaagggttacatcaatgc	166889	598863	see also 1808 line	-	-
1811	PRPS2	NM_002765.2	850	gaccagctatttcagagaataaat	166893	598874	see also 1808 line	-	-
1812	PRSS11	NM_002775.2	521	ggcaggaagatcccaacagtgtg	124939	528794	-	trypsin	-
1813	PRSS11	NM_002775.2	1032	gggaggccggttagtaaacacttg	124958	528809	see also 1812 line	-	-
1814	PSMA1	NM_002786.2	149	caggcaggattcacaatgtga	53601	579410	-	-	-
1815	PSMA4	NM_002789.3	172	ttctccagaaggtgccttatacc	185188	579437	-	proteasome endopeptidase	-
1816	PSMA4	NM_002789.3	175	tcacagaaggtcgttatcccaag	185189	579438	see also 1815 line	-	-
1817	PSMA4	NM_002789.3	652	gtcaatttgaacaagaactata	185206	579451	see also 1815 line	-	-
1818	PSMA7	NM_002792.2	652	agccattgaacaagatgactctga	185237	579483	-	-	-

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1819	PSMC2	NM_002803.2	385	ttcggaggaccacaaatacatcatt	98322	512704	-	adenosinetriphosphatase	-
1820	PSMC3	NM_002804.3	697	aggccacaggagcaatacacagtga	98365	512739	transcription regulator	transcription co-repressor	-
1821	PSMC5	NM_002805.4	909	aaggttatcatcgctactactaatag	98412	512788	-	transcription cofactor	-
1822	PSMC6	NM_002806.2	498	cagcgttagaataataactctcc	98431	512816	-	proteasome	-
1823	PSMC6	NM_002806.2	644	tggtagaagctcgtgttgatca	98437	512820	see also 1822 line	-	-
1824	PSMD2	NM_002808.3	2266	ctgcgcagtgtagctcaatatca	323226	750781	cell cycle	-	-
1825	PSMD2	NM_002808.3	2268	gcgcagtgtagctcaatatcatg	323227	750782	see also 1824 line	-	-
1826	PSMD2	NM_002808.3	2269	gcgcagtgtagctcaatatcatgc	323228	750783	see also 1824 line	-	-
1827	PSMD3	NM_002809.2	1546	aggagatgattgacatctattcc	323439	688073	-	-	-
1828	PSMD7	NM_002811.3	333	atgggttttagaccatgattatt	57197	477171	-	-	-
1829	PSMD7	NM_002811.3	334	tggtttttagaccatgattatt	57198	477172	see also 1828 line	-	-
1830	PSMD8	NM_002812.3	532	ctcaaatgctactactatttgatta	302313	670873	cell cycle	-	-
1831	PSMD8	NM_002812.3	537	atgctactactttgattacaagg	302314	670874	see also 1830 line	-	-
1832	PSMD11	NM_002815.2	978	tccggatgaccacaatcactcagc	323379	801915	-	-	-
1833	PSMD12	NM_002816.2	662	ctgcctagctgtgaaggattaca	323159	687996	-	-	-
1834	PSMD13	NM_002817.2	339	atcctaattgtgctcttactttt	323404	687615	-	-	-
1835	PSMD13	NM_002817.2	578	cacgctgctactacaaagatgc	323409	687632	see also 1834 line	-	-
1836	PTPN4	NM_002830.2	1018	aggtggctggatccacaacaacc	193740	587025	phosphatase	structural molecule	-
1837	PTPN4	NM_002830.2	1104	aagtgacccaacaagttacaag	193744	587031	see also 1836 line	-	-
1838	PTPN4	NM_002830.2	1108	gacccaacaagttacaagaaga	193745	587032	see also 1836 line	-	-
1839	PTPN4	NM_002830.2	1272	gtcaggtactctcagattatt	193748	587041	see also 1836 line	-	-
1840	PTPN4	NM_002830.2	1302	tccataacacctcaagattttg	193751	587043	see also 1836 line	-	-
1841	PTPN4	NM_002830.2	1401	agcaagtaaccttagaactctatg	193758	587049	see also 1836 line	-	-
1842	PTPN4	NM_002830.2	1412	tagaactctatggagtgaattc	193759	587050	see also 1836 line	-	-
1843	PTPN4	NM_002830.2	2574	tccacctaattgctgtatgatg	193808	587098	see also 1836 line	-	-
1844	PTPN4	NM_002830.2	2642	ctgagaagagcccccactagatagt	193811	587100	see also 1836 line	-	-
1845	PTPN4	NM_002830.2	2644	ggagaagcccactagatagttgt	193812	587101	see also 1836 line	-	-
1846	PTPN4	NM_002830.2	3035	aagttgaacgtggcagagttaaa	193822	587114	see also 1836 line	-	-
1847	PTPN4	NM_002830.2	3038	tgaacgtggcagagttaaatgt	193823	587115	see also 1836 line	-	-
1848	PTPN4	NM_002830.2	3371	cagccatgtgtctcattgaatgc	193831	587128	see also 1836 line	-	-
1849	PTPN4	NM_002830.2	3451	atgatcaaacacctagtcataa	193839	587130	see also 1836 line	-	-
1850	PTPN6	NM_002831.3	991	aagaaccgctacaagaacattct	193861	586487	phosphatase, apoptosis, signal transduction	-	-
1851	PTPN9	NM_002833.2	1213	gggtggtagctcaaaattgac	193899	588247	gpcr	-	-
1852	PTPN9	NM_002833.2	1744	tggccagctactggcctttagaaa	193909	588254	phosphatase	transporter	-
1853	PTPN9	NM_002833.2	1745	ggccagctactggcctttagaaaa	193910	588255	see also 1851 line	-	-
1854	PTPN11	NM_002834.3	381	atgacatcgaggagatggttcca	193079	539314	see also 1851 line	-	-

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1855	PTPN12	NM_002835.2	134	aagaagattgctacacaaatata	193138	586570	phosphatase	phosphatase	colon cancer(大腸癌), arthritis(関節炎)
1856	PTPN12	NM_002835.2	387	atgatattggagataatgtgt	193151	586582	see also 1855 line		
1857	PTPN12	NM_002835.2	658	tggacatgataagcttaataagg	193164	586600	see also 1855 line		
1858	PTPRA	NM_002836.2	1179	atcggtttattatcatgtttt	193928	587241	phosphatase	-	-
1859	PTPRA	NM_002836.2	3073	cagattatgccaaacttcaagtaa	193951	587266	see also 1858 line		
1860	PTPRB	NM_002837.2	5120	ctgactccaaactactcttatcc	194083	587401	phosphatase	transmembrane receptor protein tyrosine phosphatase	-
1861	PTPRB	NM_002837.2	5687	ctgtcagggaactacatcaacaga	194096	587417	see also 1860 line		
1862	PTPRG	NM_002841.2	1331	aagtcagtcgcgaggagacaattct	159207	559408	phosphatase, signal transduction, kinase_related	zinc binding	-
1863	PTPRG	NM_002841.2	1350	ttctgcactggatccttatcc	159208	559410	see also 1862 line		
1864	PTPRG	NM_002841.2	3001	tggagaggggtgtaacaaaataaa	159238	559435	see also 1862 line		
1865	PTPRG	NM_002841.2	3221	aacacatagggtgagcttatct	159242	559441	see also 1862 line		
1866	PTPRG	NM_002841.2	4752	tccaccattgttcattgaggt	159283	559487	see also 1862 line		
1867	PTPRG	NM_002841.2	4863	tgcacaaatgatcaatctttatga	159285	559490	see also 1862 line		
1868	PTPRJ	NM_002843.2	2807	cagatggatcccttaattataca	194489	587599	phosphatase, signal transduction, kinase_related	transmembrane receptor protein tyrosine phosphatase	-
1869	PTPRJ	NM_002843.2	2835	cagtcacaaattcagtaaaagtca	194490	587603	see also 1868 line		
1870	PTPRK	NM_002844.2	882	ggagtcgtgtgcataacaagtta	194546	587637	receptor_activity, phosphatase	transmembrane receptor protein tyrosine phosphatase	-
1871	PTPRK	NM_002844.2	1495	cactatctgtctaccattactcc	194570	587651	see also 1870 line		
1872	PTPRK	NM_002844.2	3948	ctgttttcacgtgcacacaatcc	194629	587700	see also 1870 line		
1873	PTPRK	NM_002844.2	3949	tgtcttcacgtgcacacaatcc	194630	587701	see also 1870 line		
1874	PTPRK	NM_002844.2	4112	atccaaagtgaatgtatgtcttg	194640	587707	see also 1870 line		
1875	PTPRM	NM_002845.2	1221	aactcgttgccacaggttaatac	194696	587763	receptor_activity, phosphatase	transmembrane receptor protein tyrosine phosphatase	-
1876	PTPRM	NM_002845.2	1224	tgttgccacaggttaataatcca	194697	587764	see also 1875 line		
1877	PTPRM	NM_002845.2	3092	tactgcagaataatgtgtaaga	194743	587813	see also 1875 line		
1878	PTPRM	NM_002845.2	3833	atcactgcacatcgttagttatg	194758	587823	see also 1875 line		
1879	PTPRM	NM_002845.2	3837	ctgcacatccgttagttatgtaa	194759	587824	see also 1875 line		
1880	PTPRN2	NM_002847.2	2947	aagatggccaaaggtgctaaga	194793	587890	receptor_activity, phosphatase	-	diabetes(糖尿病)
1881	PTPRN2	NM_002847.2	2957	aagggtgctaagagattgatc	194794	587891	see also 1880 line		



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1882	PTPRO	NM_002848.2	3324	tagaaccttcgcagatcaactatg	194901	587908	receptor activity, phosphatase	-	-
1883	RAD1	NM_002853.2	382	tgccagccttgacaacgttagg	17364	451751	cell cycle	-	-
1884	RAD1	NM_002853.2	386	cagccttgacaacgttaggaatc	17365	451752	see also 1883 line	-	-
1885	RAD1	NM_002853.2	387	agccttgacaacgttaggaatc	17366	451753	see also 1883 line	-	-
1886	RAD1	NM_002853.2	657	atgtgtaccagggttaggtta	17380	451764	see also 1883 line	-	-
1887	PVRL1	NM_002855.2	968	caggccaggtggagggtcaatc	247111	539459	receptor activity	coreceptor	-
1888	PVRL1	NM_002855.2	973	caggtggagggtcaatcacaga	247112	539462	see also 1887 line	-	-
1889	PVRL1	NM_002855.2	1505	acgacgggtcttcattccaag	247114	539466	see also 1887 line	-	-
1890	PXF	NM_002857.1	79	aagtgccttgatgattcgata	309908	688674	-	-	Zellweger syndrome('ツェルウェーグー症候群)
1891	ABCD3	NM_002858.2	121	ctcggcctgcacgtaagaaaag	70881	492662	-	ATP-binding cassette (ABC) transporter	-
1892	ABCD3	NM_002858.2	425	ctcttatctcttggttaataac	70893	492681	see also 1891 line	-	Zellweger syndrome('ツェルウェーグー症候群)
1893	ABCD3	NM_002858.2	616	aacagtgaatgctgctgatttc	70902	492695	see also 1891 line	-	-
1894	ABCD3	NM_002858.2	620	gtgtagctgctgctgattcaat	70903	492696	see also 1891 line	-	-
1895	ABCD3	NM_002858.2	737	ttgttctgggctattctcaact	70905	492698	see also 1891 line	-	-
1896	ABCD3	NM_002858.2	917	aactggggacacccatcaaat	70908	492703	see also 1891 line	-	-
1897	ABCD3	NM_002858.2	920	tggtagaacacotacataatttc	70910	492704	see also 1891 line	-	-
1898	ABCD3	NM_002858.2	923	tggaaacactacataatttcatt	70911	492705	see also 1891 line	-	-
1899	ABCD3	NM_002858.2	1154	ctggcgtagaactgactagattg	70921	492711	see also 1891 line	-	-
1900	ABCD3	NM_002858.2	1155	tggcgtagaactgactagattgg	70922	492712	see also 1891 line	-	-
1901	ABCD3	NM_002858.2	1188	tgcctggattacagaattaatgc	70923	492716	see also 1891 line	-	-
1902	ABCD3	NM_002858.2	1336	aacattataaagtgtgatcatgt	70927	492722	see also 1891 line	-	-
1903	PYCS	NM_002860.2	1968	gagagtggaacaggtaaaatttc	209727	599005	kinase related	glutamate-5-semialdehyde dehydrogenase	-
1904	PCYT2	NM_002861.1	393	ctgtgttcacggcaatgacatca	209125	598591	-	ethanolamine-phosphate cytidyltransferase, transferring	-
1905	PYGL	NM_002863.1	1887	aggatatcaatgagcccaaatga	211602	599970	-	glycosyl groups	glycogen storage disease(グリコーゲン蓄積症)
1906	RAB13	NM_002870.2	151	ggcgaagactgtgtgactcattc	37245	465084	signal transduction	protein transporter	-
1907	RAB1F	NM_002871.3	288	aggacgtgggcaacatcaagttt	159498	557514	signal transduction	protein transporter	-
1908	RAB1F	NM_002871.3	343	tggctggcattgcctagatgaca	159500	557515	see also 1907 line	-	-
1909	RAB1F	NM_002871.3	346	ctggcattgcctagatgacaaga	159501	557516	see also 1907 line	-	-
1910	RAD17	NM_002873.1	946	gtcgaacacctggttaaaagctoa	37289	465175	cell cycle, signal transduction	-	-
1911	RAD17	NM_002873.1	1479	ggcacaacaatgatgaat	37317	465201	see also 1910 line	-	-
1912	RAD17	NM_002873.1	1492	atgatgaatttttaatgaat	37318	465202	see also 1910 line	-	-
1913	RAD17	NM_002873.1	1601	gtgatataagaagtgcataaac	37321	465206	see also 1910 line	-	-
1914	RAD23B	NM_002874.2	929	tggtaactgagatcatgcatg	19727	669846	-	single-stranded DNA binding	-

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1915	RAD23B	NM_002874.2	1189	cggaatcagccctcagtttcaaca	19731	669855	see also 1914 line		
1916	RAD23B	NM_002874.2	1464	aaggttaagggcattaggtttc	19739	669860	see also 1914 line		
1917	RAD51	NM_002875.2	541	ggcgtcagagatcatcacagatt	17460	451786	-	-	breast cancer(乳癌)
1918	RAD51	NM_002875.2	899	taggtatgacgtcttatgttag	17472	451801	see also 1917 line		
1919	RAD52	NM_002879.2	312	gggtcatcgggttaataatctgg	37342	670038	-	-	
1920	RAD52	NM_002879.2	421	tacgtggagctgtgcatgtgt	37343	670041	see also 1919 line		
1921	RAF1	NM_002880.1	657	tagcaccacaaagctactactatgt	98840	513140	kinase related, apoptosis	receptor signaling protein	-
1922	RAF1	NM_002880.1	1489	cagggaatggactattgcatgc	98856	513159	see also 1921 line		
1923	RALB	NM_002881.1	258	ctgacgcttcagttcatgtatga	110457	520205	signal transduction	RAS small monomeric	-
1924	RASA1	NM_002890.1	1239	ttctgtgagccctcagataat	297054	681574	-	-	non-small-cell lung cancer(非小細胞肺癌)
1925	RASA1	NM_002890.1	1242	ttgtgagccctcagataact	297055	681575	see also 1924 line		
1926	RASA1	NM_002890.1	1729	gccaaactgttttcagatagtag	297079	681592	see also 1924 line		
1927	RASA1	NM_002890.1	2503	cacctgtatggagcagatataga	297104	681614	see also 1924 line		
1928	RASA1	NM_002890.1	2631	atgaagatgtgaacactaatga	297108	681620	see also 1924 line		
1929	RASGRF1	NM_002891.3	3664	tcccatatattccgagagattcgc	295179	664866	signal transduction	-	-
							cell cycle, transcription_regulat		
1930	RBL1	NM_002895.2	1425	agccaggatctcacatagacttt	300754	539656	or	-	-
1931	RBL1	NM_002895.2	1426	gccagatctcacatagactttg	300755	539657	see also 1930 line		
1932	RBL1	NM_002895.2	3100	tggcagcccttctaaagattga	300804	539712	see also 1930 line		
1933	RBM4	NM_002896.1	604	ggcagacttgaccgagcaatata	54069	698585	-	-	-
1934	RBM4	NM_002896.1	702	gagcgtcgtgactactacaag	54071	698591	see also 1933 line		
1935	RBM4	NM_002896.1	703	agcgtcgtgactactacaagc	54072	698592	see also 1933 line		
1936	RBMS1	NM_002897.2	885	aaccgaatgactcaactcaactc	19751	475200	-	-	-
1937	RBMS1	NM_002897.2	1094	aggcagcaccggagcaatacatgc	19757	475208	see also 1936 line		
1938	RBMS1	NM_002897.2	1231	atgaccatttccatataacttt	19760	475210	see also 1936 line		
1939	BBP3	NM_002900.1	1651	atgatcgcgcgcacacacacacg	173170	585091	-	retinoid binding	-
							transcription_regulat	p65/c-Rel	-
1940	REL	NM_002908.1	1730	atcttgaacccccctcctgaat	10411	448078	or, kinase related	heterodimer	-
1941	RENT1	NM_002911.2	623	ctgcctcgtggtttactgtaat	54162	513300	-	helicase	-
1942	RENT1	NM_002911.2	625	gcctcgtggtttactgtaatc	54163	513301	see also 1941 line		
1943	RENT1	NM_002911.2	629	gcgtggtttactgttaaccagc	54164	513302	see also 1941 line		
1944	RENT1	NM_002911.2	1227	gtggagactgtggccttaacaaga	54173	513307	see also 1941 line		
1945	RENT1	NM_002911.2	1229	ggagactgtggccttaacaagaag	54174	513308	see also 1941 line		
							translation release factor, codon specific		-
1946	REV3L	NM_002912.1	831	cagtatcagacagagacactaatg	37999	465846	-		-
1947	REV3L	NM_002912.1	881	ctcagcatgtttcaaatgtca	38002	465847	see also 1946 line		
1948	REV3L	NM_002912.1	892	ttcaaatgttcattatgattcagg	38004	465848	see also 1946 line		
1949	REV3L	NM_002912.1	1039	cagcctcatgaagcgcatattcc	38006	465855	see also 1946 line		
1950	REV3L	NM_002912.1	1124	ctgtcaagtccgaaagcaaga	38008	465860	see also 1946 line		
1951	REV3L	NM_002912.1	2162	atggaaactgcagatgaaaatagt	38025	465892	see also 1946 line		

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1952	REV3L	NM_002912.1	2269	cacaagatgctgtacattaga	38027	465895	see also 1946 line		
1953	REV3L	NM_002912.1	3461	ctctcaaatccgaaacgaaga	38065	465941	see also 1946 line		
1954	REV3L	NM_002912.1	3673	gactccctgcaaccaatattcc	38070	465944	see also 1946 line		
1955	REV3L	NM_002912.1	8547	gagtagtacctccagattacttt	38240	466103	see also 1946 line		
1956	REV3L	NM_002912.1	8549	gagtagtacctccagattactttac	38241	466104	see also 1946 line		
1957	REV3L	NM_002912.1	9237	aagtctaatcaacagatgttc	38271	466129	see also 1946 line		
1958	RFC1	NM_002913.3	782	gaggcagttgcatgaagatgaag	38321	465706	-	translation	-
1959	RFC1	NM_002913.3	1259	acgcactaatatcaagctttatc	38336	465716	see also 1958 line		
1960	RFC1	NM_002913.3	1260	cgcactaatatcaagctttatcg	38337	465717	see also 1958 line		
1961	RFC1	NM_002913.3	1413	aagtcctaatgaacgtttatgg	38344	465721	see also 1958 line		
1962	RFC1	NM_002913.3	2517	ccccctcaagctatgaatgaat	38366	465758	see also 1958 line		
1963	RFC4	NM_002916.3	764	aactatgtcagtcgaataatga	38459	466173	-	-	-
1964	RFX3	NM_002919.2	518	atggagcaatccgaacacaacg	474	466210	transcription_regulat	-	-
1965	RFX3	NM_002919.2	795	ggcgtatgagacgtgcacaaagt	482	466218	see also 1964 line		
1966	RFX3	NM_002919.2	1333	ctgcagatgtactactctttga	490	466227	see also 1964 line		
1967	RFX3	NM_002919.2	1341	tgtactactcttgaggatataca	491	466228	see also 1964 line		
1968	RFX3	NM_002919.2	1762	accaaggttgcgcgtgaagtgc	506	466236	see also 1964 line		
1969	RFX3	NM_002919.2	1964	gactagaacacagactcaagatg	509	466238	see also 1964 line		
1970	RGS13	NM_002927.3	470	ctggatggcgttgaaacctata	254977	638731	signal_transduction	-	-
1971	RIT2	NM_002930.1	219	aggcgggtccagagagtagcaagg	110751	520337	signal_transduction	-	-
1972	RNF4	NM_002938.2	884	aacggtacacccccattatata	10712	669302	transcription_regulat	zinc binding	-
1973	RNF4	NM_002938.2	886	cgtgaccacccccattatata	10713	669303	see also 1972 line		
1974	ABCE1	NM_002940.1	702	gacacaggaattgtatgtcagc	71004	492774	-	ribonuclease inhibitor	-
1975	ROBO1	NM_002941.2	901	gagctgcccaaatccagataga	245878	707979	receptor_activity	-	-
1976	ROBO1	NM_002941.2	920	atgaaatccgagatgatacc	245880	707980	see also 1975 line		
1977	ROBO1	NM_002941.2	1161	agggagtagaagatctactttct	245890	707992	see also 1975 line		
1978	ROBO1	NM_002941.2	3058	aacaaccaactggatacaaca	245949	708048	see also 1975 line		
1979	ROBO1	NM_002941.2	3094	ctccctgagtcacactgtttatgg	245952	708049	see also 1975 line		
1980	ROBO1	NM_002941.2	3113	atggtgatgtggacacttagtaac	245953	708050	see also 1975 line		
1981	ROBO1	NM_002941.2	3114	tgggtgatgtggacacttagtaaca	245954	708051	see also 1975 line		
1982	ROBO1	NM_002941.2	3153	aacctcaatagcccacaaatcga	245955	708054	see also 1975 line		
1983	ROBO1	NM_002941.2	3179	atggcggcttggtaacccaatca	245957	708056	see also 1975 line		
1984	RORA	NM_002943.2	560	gtcctcgtcagaagaactgtttg	10721	448119	transcription_regulat	or,	-
1985	RORA	NM_002943.2	1245	tgcacaaacgcatgattgattta	10740	448127	receptor_activity,	-	-
1986	ROS1	NM_002944.2	865	tggacctattttggatttaact	99507	513822	see also 1984 line	transmembrane receptor protein	CNS Tumours(中枢神経腫瘍)、melanoma(メラノーマ)
1987	ROS1	NM_002944.2	2461	gtgctgggtcactctctact	99556	513861	receptor_activity,	tyrosine kinase	
1988	ROS1	NM_002944.2	4173	atcaatgtcttctgaatgtact	99609	513905	signal_transduction		

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1989	RPA1	NM_002945.2	1256	atccagaggcctataagcttcg	19800	451214	-	single-stranded DNA binding	-
1990	RPA2	NM_002946.3	532	gagaaggctccaaccaacattgt	19822	486072	-	single-stranded DNA binding	-
1991	RPA2	NM_002946.3	535	aagctccaaccaacattgttta	19823	486073	see also 1990 line		
1992	RPA2	NM_002946.3	536	aggctccaaccaacattgttac	19824	486074	see also 1990 line		
1993	RPN2	NM_002951.2	1904	cogtggtgtccaatacattcact	211315	708864	-	dolichyl- diphospho- oligosaccharide- protein	-
1994	RSN	NM_002956.2	3738	ctcaataatcagttgttagaat	65621	486147	-	nucleic acid binding	Hodgkin disease(ホジキン病), Hodgkin's disease(ホジキン病)
1995	RSN	NM_002956.2	4073	agccaggagagtcagattgatt	65633	486149	see also 1994 line		
1996	SORT1	NM_002959.3	2014	cagaatggtcgagactattgt	273022	637914	receptor activity, gpcr	protein transporter	-
1997	SORT1	NM_002959.3	2193	aacaaatgggtaccggaaattc	273027	637916	see also 1996 line		
1998	SI00A10	NM_002966.1	357	atgcaatgactattttagtag	152361	553385	-	receptor binding	-
1999	SALL1	NM_002968.1	14	agcaagcgaagcctcaacattc	38807	466648	transcription regulat or	transcription factor	Townes-Brooks syndrome(タウンス・ブロックス症 候群)
2000	SALL1	NM_002968.1	19	gcgaagctcaacatttcaatc	38808	466649	see also 1999 line		
2001	SALL1	NM_002968.1	325	gactgcagcgccttcagaaac	38814	466656	see also 1999 line		
2002	SALL1	NM_002968.1	500	caggtaccctcagcagatcacacc	38815	466657	see also 1999 line		
2003	SALL1	NM_002968.1	3039	gagtgcttgagacattcactata	38846	466693	see also 1999 line		
2004	SALL1	NM_002968.1	3593	ctgtggatggcccatgaacatt	38855	466701	see also 1999 line		
2005	SCA2	NM_002973.1	376	tccggctcagactgtttttag	46703	471317	-	-	spinocerebellar ataxia(脊髄小脳失調)
2006	SCA2	NM_002973.1	377	cgcctcagactgtttttagtag	46704	471318	see also 2005 line		
2007	SCA2	NM_002973.1	2939	ctcagccaaagccttctactacc	46746	471359	see also 2005 line		
2008	SCA2	NM_002973.1	3096	accttatcccaatcacctatga	46753	471362	see also 2005 line		
2009	SCA2	NM_002973.1	3469	atgtatgcattgtcccaattacc	46765	471369	see also 2005 line		
2010	SCA2	NM_002973.1	3477	atgtcccaattaccatacaaca	46766	471371	see also 2005 line		
2011	SCA2	NM_002973.1	3479	gtcccaattaccatacaacaag	46767	471372	see also 2005 line		
2012	SCA2	NM_002973.1	3944	cccatgcgccaatgatgctaag	46772	471379	see also 2005 line		
2013	SCA2	NM_002973.1	3947	atgcgccaatgatgctaagacg	46773	471380	see also 2005 line	molecular_function unknown	-
2014	SDC4	NM_002999.2	585	tgggcaagaaccatctacaag	121076	525392	-	transporter	-
2015	SEC14L1	NM_003003.1	1681	ttctcattatgcaggaaatga	180957	656738	-	kinase related, signal transduction	-
2016	MAP2K4	NM_003010.2	1196	aggtgcgcatgctattgttataa	88977	506797	see also 2016 line	protein tyrosine kinase	breast cancer(乳癌), pancreatic cancer(膵臓癌)
2017	MAP2K4	NM_003010.2	1198	gtcgcgcatgctattgttataa	88978	506798	see also 2016 line	receptor activity, signal transduction	-
2018	SFRP4	NM_003014.2	560	gcgagcccccctaatgaagatgac	246843	633820	see also 2018 line	-	-
2019	SFRP4	NM_003014.2	817	aactacagctatgtatttcacg	246654	633827	see also 2018 line	-	-

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2020	SFRP5	NM_003015.2	1025	taccgctgggacaagaagaataa	246667	633846	receptor_activity、 apoptosis、 signal_transduction	-	-
2021	SH3BGR1	NM_003022.1	82	gtgatcogtgtatattatgcac	252794	709858	-	SH3/SH2 adaptor protein	-
2022	SH3BGR1	NM_003022.1	162	agccacaataatagattgaag	252799	709863	see also 2021 line	-	-
2023	SH3BGR1	NM_003022.1	212	atcggaagtggatggagagaaat	252800	709864	see also 2021 line	-	-
2024	ITSN1	NM_003024.1	878	cagctggcttcaataggaatct	146829	535968	-	molecular_function	-
2025	ITSN1	NM_003024.1	881	ctggcttcaataggaatcttc	146830	535969	see also 2024 line	unknown	-
2026	ITSN1	NM_003024.1	996	ctgtcctcctccagaaatcatt	146832	535973	see also 2024 line	-	-
2027	ITSN1	NM_003024.1	3155	gagcaaggagattaaccttcca	146872	535992	see also 2024 line	-	-
2028	ITSN1	NM_003024.1	3247	cggagcttcccttctaacttg	146875	535995	see also 2024 line	-	-
2029	SH3GL3	NM_003027.2	1380	ctgctgctggtgtctctatgact	317865	540441	signal_transduction	-	-
2030	SH3GL3	NM_003027.2	1444	gacatcattacattaaccaatca	317866	540443	see also 2029 line	-	-
2031	SHC1	NM_003029.3	197	gcccacgggagctttgtcaataag	253028	540449	kinase_related、 receptor_activity	-	-
2032	SHOX2	NM_003030.2	230	gaggcgaaagtcggaccaattcca	11199	448383	transcription_regulat or	-	-
2033	SHOX2	NM_003030.2	475	atgtcaacgttaggtgtttaagg	11205	448391	see also 2032 line	-	-
2034	SIL	NM_003035.1	561	accatccactgtcttatgtctca	309387	698744	-	-	-
2035	SIL	NM_003035.1	1615	cagtgagtcagaagattttctaag	309421	698776	see also 2034 line	-	-
2036	SLC5A2	NM_003041.1	698	ttcgggtctcttcgacaaatacc	256190	656944	-	sugar porter	renal glycosuria(腎性糖尿病)
2037	SLC5A2	NM_003041.1	701	gggtotcttgcacaaatccctgg	256191	656945	see also 2036 line	-	-
2038	SLC6A6	NM_003043.1	1013	ctgaacagtggtaccagttttgt	255693	640155	-	taurine:sodium symporter	-
2039	SLC6A6	NM_003043.1	1032	ttgtctgtgtcttgcacattttt	255694	640156	see also 2038 line	-	-
2040	SLC6A6	NM_003043.1	1038	ctggcttcgcaattttttccatc	255696	640157	see also 2038 line	-	-
2041	SLC6A6	NM_003043.1	1280	ttcctaagggaagggttatctcg	255704	640162	see also 2038 line	-	-
2042	SLC6A6	NM_003043.1	1291	gggttatctcggggaatattcca	255705	640164	see also 2038 line	-	-
2043	SLC6A6	NM_003043.1	1360	gacggagggtggcattgtgtgt	255706	640166	see also 2038 line	-	-
2044	SLC6A6	NM_003043.1	1427	tgggttgcattctttgaattgtt	255707	640167	see also 2038 line	-	-
2045	SLC6A6	NM_003043.1	1596	acgtaccctcgacctacaacaaa	255709	640172	see also 2038 line	-	-
2046	SLC6A12	NM_003044.2	694	ggggccaatggaccaacaagatgg	255933	639937	-	betaine/GABA:sodi um symporter	-
2047	SLC18A1	NM_003053.1	1334	ttgtgtgtgtggccaacaagatg	271976	656836	-	monoamine transporter	-
2048	SLC18A2	NM_003054.1	523	aacagaattggctatccaattcc	271986	775219	-	monoamine transporter	-
2049	SLC18A2	NM_003054.1	1376	ctgtgtgtgtgtctattgcaaaag	272002	775232	see also 2048 line	-	-
2050	SLC18A2	NM_003054.1	1377	tgtgtgtgtgtgtctattgcaaaag	272003	775233	see also 2048 line	-	-
2051	SLC18A2	NM_003054.1	1420	atgacaattattgggataattga	272005	775235	see also 2048 line	-	-
2052	SLC18A2	NM_003054.1	1422	gacaattattgggataattgata	272006	775236	see also 2048 line	-	-

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2053	SMARCA1	NM_003069.2	833	tggatgaatgaattaaacagatg	39639	467217	transcription_regulat	-	-
2054	SMARCA1	NM_003069.2	958	ttcttatgagatgtaattaaag	39644	467224	see also 2053 line	-	-
2055	SMARCA1	NM_003069.2	1359	tgaacagagaatggtatacaaaa	39654	467236	see also 2053 line	-	-
2056	SMARCA1	NM_003069.2	1362	aacagagaatggtatacaaaaatc	39655	467237	see also 2053 line	-	-
2057	SMARCA1	NM_003069.2	2395	gcgtgtcagcgagccaaagattc	39687	467269	see also 2053 line	-	-
2058	SMARCA1	NM_003069.2	2771	gagggagtcagtgaggtattcagc	39693	467277	see also 2053 line	-	-
2059	SMARCA1	NM_003069.2	3209	aagaacagggcaactaaaactcc	39702	467296	see also 2053 line	-	-
2060	SMARCB1	NM_003073.2	263	tcagaggtctctgtacaaagaga	300021	669410	cell_cycle, transcription_regulat	translation regulator	chronic myeloid leukemia(慢性骨髓性白血病)、 malignant rhabdoid tumor(悪性ラブドイド腫瘍)、 rhabdoid tumor(ラブドイド腫瘍)、 medulloblastoma(髄芽腫)
2061	SMARCB1	NM_003073.2	267	aggtctctgtacaagagatacc	300022	669412	see also 2060 line	-	-
2062	SMARCC1	NM_003074.2	325	cggatgctctaccataaaaaca	18996	451236	transcription_regulat	-	-
2063	SMARCC2	NM_003075.2	258	ctgcogatacaaatgtttctctaga	19069	812072	transcription_regulat	-	-
2064	SMARCC2	NM_003075.2	310	ttcttcagctgcctcaaaaatc	19071	812073	see also 2063 line	-	-
2065	SMARCC2	NM_003075.2	316	cagctgcctcaaaaatcaagagt	19072	812075	see also 2063 line	-	-
2066	SMARCC2	NM_003075.2	1757	tggctcgcacagacacatgtaca	19097	812094	see also 2063 line	-	-
2067	SMARCD1	NM_003076.3	475	cagcagcagcggtccaaaatcgc	284397	669676	-	-	-
2068	SMARCD1	NM_003076.3	478	cagcagcagcggtccaaaatcgaaa	284398	669677	see also 2067 line	-	-
2069	SMARCD1	NM_003076.3	479	agcagcaggtccaaaatcgaaaac	284399	669678	see also 2067 line	-	-
2070	SMARCD1	NM_003076.3	1608	ggctgtgtccgatacttctact	284419	669699	see also 2067 line	-	-
2071	SMARCD1	NM_003076.3	1610	ctgtgtccgatacttctactcc	284420	669700	see also 2067 line	-	-
2072	SMARCD2	NM_003077.2	1678	agcgcgagacacctcaagatcatc	112404	743776	transcription_regulat	-	-
2073	SMARCD2	NM_003077.2	1679	gcgcgagacacctcaagatcatca	112405	743777	see also 2072 line	-	-
2074	SMARCD3	NM_003078.2	1278	cagtgctctggacagtaagatcc	112415	605207	transcription_regulat	-	-
2075	SNAPC1	NM_003082.2	521	aacttatcactctctgatgtatta	300907	801396	transcription_regulat	-	-
2076	SNAPC3	NM_003084.1	878	gactgctagaatgggaagatttca	40288	741106	transcription_regulat	DNA binding	-
2077	SNAPC3	NM_003084.1	880	ctgctagaatgggaagatttccacc	40289	741107	see also 2076 line	-	-
2078	SNAPC3	NM_003084.1	1097	cagatgggtgacgaacaatgaca	40295	741114	see also 2076 line	-	-
2079	SNAPC4	NM_003086.1	1159	gactgggagaagatttccaatat	11718	454021	transcription_regulat	-	-
2080	SNRPA1	NM_003090.1	551	acggggtgcacagctgtcaaaagg	54842	475624	-	RNA binding	-
2081	SNX2	NM_003100.2	912	ctgcgcagcgtgtcaacaaaatg	270695	652519	-	protein transporter	-
2082	SNX2	NM_003100.2	913	tgcgcagctgtcaacaaaatga	270696	652520	see also 2081 line	-	-
2083	SNX2	NM_003100.2	1029	ttgaagccttggtctgtctataga	270697	652525	see also 2081 line	-	-
2084	SNX2	NM_003100.2	1033	agccttggtctgtctatagaaga	270699	652526	see also 2081 line	-	-
2085	SNX2	NM_003100.2	1163	gagaagatagaccaggttaccatca	270704	652529	see also 2081 line	-	-

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2086	SON	NM_003103.5	2907	tacatctagacgttctatgatg	40387	467661	-	-
2087	SON	NM_003103.5	2911	atctagacgttctatgatgtg	40389	467662	see also 2086 line	
2088	SON	NM_003103.5	6086	ttggataagcctcaattacttga	40460	467744	see also 2086 line	
2089	SON	NM_003103.5	6345	atcatcatccctttaactcagt	40468	467751	see also 2086 line	
2090	SON	NM_003103.5	6466	tggtatccaacatcggaataag	40471	467756	see also 2086 line	
2091	SOX11	NM_003108.3	184	gacggcgctcgccgacacatcaagc	40575	467901	transcription_regulat	DNA binding
2092	SP2	NM_003110.3	1024	aaccacactgtctaagactaaca	40751	741963	-	translation
2093	SP4	NM_003112.2	475	tggaacacgttgcccaactgttg	40785	468091	transcription_regulat	translation
2094	SP4	NM_003112.2	922	tggtactcagcctcaagttgtaa	40796	468103	see also 2093 line	regulator
2095	SP4	NM_003112.2	1729	tggtgcccaataaactttgaata	40811	468126	see also 2093 line	
2096	SP4	NM_003112.2	1731	gtccccataaactttgaatact	40812	468127	see also 2093 line	
2097	SPARC	NM_003118.1	365	ccccattggcgagttgagaag	127203	554215	-	hepatocellular carcinoma(肝癌)、esophageal cancer(食道癌)、ovarian cancer(原発性卵巣癌)、prostate cancer(前立腺癌)
2098	SPARC	NM_003118.1	366	ccccattggcgagttgagaag	127204	554216	see also 2097 line	collagen binding
2099	SPTA1	NM_003126.1	6857	acgctctgacatccttgcatacaaa	114806	524051	-	structural constituent of cytoskeleton
2100	SPTA1	NM_003126.1	6858	cgctctgacatccttgcatacaat	114807	524052	see also 2099 line	
2101	SPTB1	NM_003128.1	875	gggtaccaccaatgcacattca	119261	524153	-	
2102	SPTB1	NM_003128.1	879	acccaatgcacacattcacaatt	119262	524154	see also 2101 line	
2103	SPTB1	NM_003128.1	881	cocaatgcacacattcacaatt	119264	524155	see also 2101 line	
2104	SPTB1	NM_003128.1	1807	cacagcgaggagaggaacattgca	119274	524171	see also 2101 line	
2105	SPTB1	NM_003128.1	1809	cagcgaggagaggaacattgcatc	119275	524172	see also 2101 line	
2106	SPTB1	NM_003128.1	1810	agcgaggagaggaacattgcatcc	119276	524173	see also 2101 line	
2107	SPTB1	NM_003128.1	1968	ctcaagactatggcaaacactta	119278	524179	see also 2101 line	
2108	SPTB1	NM_003128.1	3188	taccacctcgagtgcaatgaaac	119296	524193	see also 2101 line	
2109	SPTB1	NM_003128.1	3189	accacctcgagtgcaatgaaac	119297	524194	see also 2101 line	
2110	SPTB1	NM_003128.1	3194	ctcgagtgcaatgaaaccaaatc	119298	524195	see also 2101 line	
2111	SPTB1	NM_003128.1	6933	acgagtgaggagcccaataaag	119345	790413	see also 2101 line	
2112	SPTB1	NM_003128.1	7093	ctgcgaagtggcccttgattaca	119351	790419	see also 2101 line	
2113	SRF	NM_003131.1	847	ggaggagcggggcgcacatgaaga	11923	448692	transcription_regulat	regulator
2114	SRF	NM_003131.1	922	cagtgagacagggccatgtgata	11924	448693	see also 2113 line	-
2115	SRP19	NM_003135.1	107	cggccgaccagggacaggtttatt	49473	472570	-	7S RNA binding
2116	SRP54	NM_003136.2	1043	tggtacagggggaacatatagatg	54866	703498	-	protein signal sequence binding
2117	SRPK1	NM_003137.2	204	aggtatcatcttctgaaaattg	101236	515319	kinase_related、cell_cycle	-
2118	SRPK1	NM_003137.2	436	atggtttcaactactagatga	101247	515325	see also 2117 line	
2119	SRPK1	NM_003137.2	835	aagcgccagggcagaattactaga	101250	515335	see also 2117 line	

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2120	SRPR	NM_003139.2	1085	tgcgtgatactatctattgctaag	110919	518061	receptor_activity	signal recognition particle receptor	-
2121	SRPR	NM_003139.2	1086	gcgtgatactatctattgctaaga	110920	518062	see also 2120 line		
2122	SRPR	NM_003139.2	1397	tccctcattgctgcctgataca	110928	518064	see also 2120 line		
2123	SRPR	NM_003139.2	1649	ctgcctcggcgaactcattact	110931	518068	see also 2120 line		
2124	SSB	NM_003142.2	158	ctgtcatcaaatgagattatt	48014	475688	transcription_regulat	tRNA binding	-
2125	SSR1	NM_003144.2	644	aagatttgaacggcaatgtattc	153226	720448	-	signal sequence receptor	-
2126	SSR2	NM_003145.2	451	tggctcagcgggagttgacagg	177247	716472	-	signal sequence receptor	-
2127	SSRP1	NM_003146.2	945	tggcaagaccctttgactacaaga	41220	468382	transcription_regulat	DNA binding	-
2128	STAT4	NM_003151.2	2112	gtgagattccactctgtagaacc	12196	448944	transcription_regulat	translation regulator	-
2129	STIM1	NM_003156.2	840	agggaaagaccctcaattaccatga	136457	540679	cell_cycle	protein binding	-
2130	STIM1	NM_003156.2	1207	tgcgtggtgtctctatogttatt	136460	540683	see also 2129 line		
2131	STIM1	NM_003156.2	1209	ctggtgtgtctatcgttattgg	136461	540684	see also 2129 line		
2132	STIM1	NM_003156.2	1212	gtggtgtctatcgttattggt	136462	540685	see also 2129 line		
2133	STIM1	NM_003156.2	1241	ctgctggtttgccttatccaga	136463	540687	see also 2129 line		
2134	RPSKB1	NM_003161.1	317	ttgtaaaagggggctatggaag	99950	488697	kinase_related、 signal_transduction	protein serine/threonine kinase	-
2135	STRN	NM_003162.1	1050	gagggcccaataggctcaaaactac	122837	527387	-	calmodulin binding	-
2136	STRN	NM_003162.1	1051	agggcccaataggctcaaaactaca	122838	527388	see also 2135 line		
2137	STRN	NM_003162.1	2179	ggcagtcactactttcaatacag	122879	527422	see also 2135 line		
2138	STX5A	NM_003164.2	492	aagcgaagtcctcttttgatga	270976	652750	-	protein transporter	-
2139	STX5A	NM_003164.2	561	atcaatagcctcaacaacaaat	270980	652755	see also 2138 line		
2140	STX5A	NM_003164.2	683	ggcttctatgtccaatgacttca	270981	652758	see also 2138 line		
2141	SUPT5H	NM_003169.2	614	aactgggagagattacatgaag	12289	658125	transcription_regulat	transcription elongation factor	-
2142	SUPT6H	NM_003170.2	739	ttcgggtggactttgactatga	12321	475733	-	-	-
2143	SUPT6H	NM_003170.2	1325	acctaacacggctgtttgagaag	12331	475742	see also 2142 line		
2144	SUPT6H	NM_003170.2	3161	gtcccaaaagtcttcataatgt	12362	475771	see also 2142 line		
2145	SUPT6H	NM_003170.2	4046	agcagcagcgggacacacatacatc	12381	475799	see also 2142 line		
2146	SUPT6H	NM_003170.2	4284	gtgatcaacaagtgaggaaatcg	12385	475811	see also 2142 line		
2147	SUPT6H	NM_003170.2	4421	aggagctgctcatcaaaactaag	12389	475817	see also 2142 line		
2148	SUPT6H	NM_003170.2	4527	gggtaaacccaggatagaatag	12391	475819	see also 2142 line		
2149	SUPV3L1	NM_003171.2	539	ttcttgacacatgccaaacaat	54973	486468	-	-	-
2150	SUPV3L1	NM_003171.2	582	aggatgatctactgaaatcagt	54975	486471	see also 2149 line		
2151	SUPV3L1	NM_003171.2	1352	ttggacataaggagaattttt	55005	486490	see also 2149 line		
2152	SUPV3L1	NM_003171.2	1640	ctgtccaatctcatgatattt	55014	486496	see also 2149 line		
2153	SUPV3L1	NM_003171.2	1697	gtctgcaatggtgatattttaa	55018	486501	see also 2149 line		
2154	SUPV3L1	NM_003171.2	1972	gtggcctaagctaccgattattgg	55028	486512	see also 2149 line		



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2155	SVIL	NM_003174.2	1881	tgaagtgcacactgactataagt	119440	524510	-	-
2156	SYN2	NM_003178.2	1540	cagtatattctcgactgtaatgg	314163	678858	-	schizophrenia(精神分裂病)
2157	TAC1	NM_003182.1	464	atgggcaaaagagcctttaaattc	169655	567583	signal_transduction	-
2158	TBCC	NM_003192.1	940	ctggtttagatagagcacaataat	299101	801308	-	-
2159	TBOC	NM_003192.1	941	tgggttagatagaggagcaaaaata	299102	801309	co-chaperonin	-
2160	TCEB3	NM_003198.1	1862	ttgtcaccggagacttaagaag	136668	669445	transcription_regulat or	transcription factor
2161	TOF4	NM_003199.1	470	ctctctccacactttgtcaattc	41821	468865	or	transcription_regulat regulator
2162	TCF4	NM_003199.1	483	ttgtcaattcagacaatacaagt	41822	468866	see also 2161 line	-
2163	TCF4	NM_003199.1	514	aaggcgctcatactctctctatg	41823	468867	see also 2161 line	-
2164	TCF4	NM_003199.1	515	agggcgctcactactctctattgg	41824	468868	see also 2161 line	-
2165	TCF4	NM_003199.1	786	ggagactcgccaggctctctccc	41829	468875	see also 2161 line	-
2166	TCF4	NM_003199.1	978	atgaacgtttgagctctccatca	41831	468879	see also 2161 line	-
2167	NFE2L1	NM_003204.1	1121	atcctttggcgacagagattatga	7710	462713	transcription_regulat or	transcription regulator
2168	NFE2L1	NM_003204.1	1126	ttggcgacagagattatgcttgg	7711	462714	see also 2167 line	-
2169	NFE2L1	NM_003204.1	1152	ctggcgctgagggtttttgactat	7713	462716	see also 2167 line	-
2170	NFE2L1	NM_003204.1	1153	tggcggtgagggtttttgactata	7714	462717	see also 2167 line	-
2171	TCF12	NM_003205.2	422	atgattcattctagaggtttaca	41655	468750	transcription_regulat or	RNA polymerase II transcription factor
2172	TCF12	NM_003205.2	466	cacttgaatgacagctgattagg	41657	468751	see also 2171 line	extraskelatal myxoid chondrosarcoma(骨外性粘 液性軟骨肉腫)
2173	TCF12	NM_003205.2	469	ttgaatgacagctgattaggagc	41658	468752	see also 2171 line	-
2174	TCF12	NM_003205.2	506	ccccacacacttctatgaactca	41659	468753	see also 2171 line	-
2175	TCF12	NM_003205.2	871	atgttcctgacagcttcttttat	41665	468762	see also 2171 line	-
2176	TCF12	NM_003205.2	1633	gtcagttcctaatggcaatcattc	41678	468783	see also 2171 line	-
2177	TFAP2A	NM_003220.1	153	ctgggcactgtgagtcactctcc	531	449365	transcription_regulat or	Transcription factor AP-2
2178	TFAP2A	NM_003220.1	544	atgtagaagacccgggtattaac	532	449366	see also 2177 line	breast cancer(乳癌)、ovarian cancer(原発性卵 巢癌)、melanoma(メラノーマ)
2179	TFAP2A	NM_003220.1	547	tagaagaccgccgggtattaaacatc	533	449367	see also 2177 line	-
2180	TFAP2A	NM_003220.1	628	ccgtctccgccatccctattaac	535	449370	see also 2177 line	-
2181	TFAP2A	NM_003220.1	632	ctccgccatccctattaaacaagg	536	449371	see also 2177 line	-
2182	TFAP2B	NM_003221.2	1351	tgggggaagcccccaggtagtaaaa	13117	449398	transcription_regulat or	translation regulator
2183	ARFRP1	NM_003224.2	284	aaggggatgagctctatcacaat	108322	518638	small monomeric GTPase	breast cancer(乳癌)
2184	TFRC	NM_003234.1	950	tgttaactgtgtccatgcgtaat	191826	585345	signal_transduction receptor activity	-
2185	TG	NM_003235.3	6720	ttccttgagttccatgcgtgc	170114	672661	transferrin signal_transduction hormone	multinodular goiter(多結節性甲状腺腫)
2186	TG	NM_003235.3	7783	atgccaccgggactactatttc	170127	672672	see also 2185 line	-
2187	TGM3	NM_003245.2	89	agcgcatcacacagacaagtct	153572	554344	protein-glutamine gamma- glutamyltransferas	-
2188	THRS1	NM_003246.2	3169	ctgtagtttatratatgaattgat	153750	554443	signal_transduction structural molecule	colorectal cancer(大腸癌)、colorectal cancers(結腸直腸癌)、mesothelioma(中皮腫)

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2189	THOPI	NM_003249.3	1159	ggagacatcgctactacatgaac	160014	559690	-	receptor_activity, transcription_regulat	zinc binding	-
2190	THRA	NM_003250.4	1121	aagccttoagcaggttaccacag	13328	449537	or	thyroid hormone receptor	-	-
2191	THRA	NM_003250.4	1122	agccttaagcaggttaccacaga	13329	449538	see also 2190 line	-	-	-
2192	THRA	NM_003250.4	1128	cagcgagttaccacagatcatca	13330	449539	see also 2190 line	-	-	-
2193	THRA	NM_003250.4	1538	acgtcaacacacgcgaacacacac	13333	449541	see also 2190 line	-	-	-
2194	THRA	NM_003250.4	1543	aaccaccgcaaacacacacattcc	13334	449542	see also 2190 line	-	-	-
2195	TIAL1	NM_003252.2	180	aagcaatgaccatattgtcttg	41952	475866	transcription_regulat or, apoptosis	-	-	-
2196	TIAL1	NM_003252.2	606	cactaagacgttgagatttgaag	41957	475878	see also 2195 line	-	-	-
2197	TIAL1	NM_003252.2	867	ggtaaagaatctcctgatga	41965	475887	see also 2195 line	-	-	-
2198	TIMP2	NM_003255.2	400	accgcgaacagcggtttgcaat	293876	663642	-	metallopeptide se inhibitor	hepatocellular carcinoma(肝癌)、 chondrosarcoma(軟骨肉腫)、bladder cancer(膀 胱癌)、breast cancer(乳癌)、lung cancer(肺癌)、	-
2199	TIMP2	NM_003255.2	402	ccgcaacagcggtttgcaatgc	293877	663644	see also 2198 line	-	-	-
2200	TIMP4	NM_003256.1	271	tcggatgaatcaaacagata	293885	663671	-	metallopeptide se inhibitor	-	-
2201	TJP1	NM_003257.2	598	acgagataatctcatttccaga	331305	541229	-	-	-	-
2202	TJP1	NM_003257.2	690	atgaccgagttgcaatggttaac	331310	541235	see also 2201 line	-	-	-
2203	TJP1	NM_003257.2	1173	atgtactgtgacagaaatgatg	331325	541240	see also 2201 line	-	-	-
2204	TJP1	NM_003257.2	2885	aaggcgagtggtctacacagtg	331381	541303	see also 2201 line	-	-	-
2205	TJP1	NM_003257.2	2888	ggagatggtctcacaagtgtga	331382	541304	see also 2201 line	-	-	-
2206	TJP1	NM_003257.2	3026	ggggctcacactgacgaagaact	331389	541309	see also 2201 line	-	-	-
2207	TJP1	NM_003257.2	3745	gtgtcattattatgatgacaaac	331412	541327	see also 2201 line	-	-	-
2208	TJP1	NM_003257.2	4556	tacttgaccagagaagatttga	331430	541346	see also 2201 line	-	-	-
2209	ICAM5	NM_003259.2	1758	gtggcgtcacggtggaatagg	317988	682684	-	-	-	-
2210	TLOC1	NM_003262.2	654	tgtgaaccatctaaagaagaga	271117	650009	receptor activity	-	-	-
2211	TLOC1	NM_003262.2	696	togattcaactgtccacaaagt	271119	650012	see also 2210 line	-	-	-
2212	TLOC1	NM_003262.2	890	ggccctaaagaatgaagaatg	271129	650017	see also 2210 line	-	-	-
2213	TLOC1	NM_003262.2	1272	ggagtaggtgtttattacctca	271130	650024	see also 2210 line	-	-	-
2214	TLR1	NM_003263.2	651	ttgatgccctgcctatatgcaaa	123497	527927	receptor_activity, kinase, related	triacylated lipoprotein binding	-	-
2215	NR2E1	NM_003269.2	722	cggatacaaacgcccatttttag	8423	447146	transcription_regulat or,	translation regulator	-	-
2216	NR2E1	NM_003269.2	728	aacaagccgcattttagatatcc	8424	447148	see also 2215 line	-	-	-
2217	NR2E1	NM_003269.2	1215	gtgaatggagaccccaatgtatct	8430	447157	see also 2215 line	-	-	-
2218	TM4SF6	NM_003270.2	438	ttgtttcagacatgagattaaag	312818	693423	kinase, related	-	-	-
2219	TNNC1	NM_003280.1	325	ctcttcgcagttttgacaaaaa	154066	554698	-	calcium ion binding	-	-
2220	TNR	NM_003285.1	1131	ggcagtgagcgggaatgtgatct	289224	678022	-	-	-	-
2221	TNR	NM_003285.1	2060	ctgagatgagtttgaatatct	289241	678033	see also 2220 line	-	-	-
2222	TOP1	NM_003286.2	285	agcgatttcggatgaatgatc	42443	469396	-	translation	testicular cancer(睾丸癌)	-
2223	TOP1	NM_003286.2	286	ggcgatttcggatgaatgatc	42444	469397	see also 2222 line	-	-	-
2224	TOP1	NM_003286.2	674	atgatctgattataaaccttaag	42454	469408	see also 2222 line	-	-	-

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2225	TPP2	NM_003291.1	177	ccggcgatgcaggttacactga	183221	576952	-	tripeptidyl- peptidase II	-
2226	TPP2	NM_003291.1	1486	aggctgacaataatagaatttt	183265	576987	see also 2225 line		
2227	TPR	NM_003292.1	3459	aagcacagctttaagttaagc	302448	690007	-		papillary Thyroid Carcinomas(副甲状腺乳頭癌)
2228	TPR	NM_003292.1	6286	gggactgatccaggtacagaaac	302501	690080	see also 2227 line		
2229	NR2C1	NM_003297.1	1635	aaggcttatgtggaattccaaga	8358	447139	transcription_regulat or,	steroid hormone receptor	-
2230	TRA1	NM_003299.1	2325	aagaatgcttcgctcgaattga	102366	516722	-	heat shock protein	-
2231	TRAF3	NM_003300.2	917	aagcgctatggctcgctttttca	160069	559721	apoptosis, signal_transduction	-	-
2232	TRHR	NM_003301.1	578	tactactcaactatttacctaat	239032	629222	gpcr, receptor_activity, signal_transduction	thyrotropin- releasing hormone receptor	-
2233	TRPC1	NM_003304.3	297	gggtggacaaagggtgaacttta	261645	645305	channel	store-operated calcium channel	-
2234	TRPC1	NM_003304.3	307	agggtgactatttatggtaaa	261646	645309	see also 2233 line		
2235	TRPC1	NM_003304.3	401	taccataactattgaaacgaaa	261652	645312	see also 2233 line		
2236	TRPC1	NM_003304.3	530	agcgtcatcgttaacaactatg	261658	645328	see also 2233 line		
2237	TRPC1	NM_003304.3	1068	aagcccaacctgaagaagataat	261676	645352	see also 2233 line		
2238	TRPC1	NM_003304.3	2036	atggcttagctactttgtatgaca	261708	645377	see also 2233 line		
2239	TRPC1	NM_003304.3	2325	ctggccaaagatctgcaaaatt	261720	645384	see also 2233 line		
2240	TRPC1	NM_003304.3	2326	tgcgccaagatctgcaaaattc	261721	645385	see also 2233 line		
2241	TRPC1	NM_003304.3	2377	tccggactctaaatagtctatg	261724	645386	see also 2233 line		
2242	TRPC1	NM_003304.3	2378	tcggactctaaatagtctatg	261725	645387	see also 2233 line		
2243	TRPC3	NM_003305.1	2392	aactatggtggctgtttactca	261754	645412	channel	store-operated calcium channel	-
2244	TRPC3	NM_003305.1	2858	tccagcctctgttatgaacttt	261767	645431	see also 2243 line		
2245	TRPC3	NM_003305.1	2860	cagccttcgttatgaactttgg	261768	645432	see also 2243 line		
2246	TTC1	NM_003314.1	730	aagctgtatgagattacctaag	136954	748223	-	protein binding	-
2247	DNAJC7	NM_003315.1	644	aggctttgacctttattacgaag	130761	709288	-	protein binding	-
2248	DNAJC7	NM_003315.1	892	atcgggtagcggtaattccaag	130763	709295	see also 2247 line		
2249	DNAJC7	NM_003315.1	1354	tagatgaggaggcgatgaatag	130768	709306	see also 2247 line		
2250	TTN	NM_003319.2	242	acgtttacgcagcgggtacaag	103869	791084	kinase_related, receptor_activity	-	cardiomyopathy(アールコール性心筋症)、tardive tibial muscular dystrophy(遅発性脛骨筋ジストロ
2251	TTN	NM_003319.2	278	gagggtagtagcagcaaccttga	103870	791085	see also 2250 line		
2252	TTN	NM_003319.2	378	ccggcgtagcagatcctcttagc	103872	791088	see also 2250 line		
2253	TUFM	NM_003321.3	446	gggtcatgcagattatgtaaga	57807	477196	-	translation elongation factor	-
2254	TULP1	NM_003322.2	1140	accgttcacggctcttgacaac	314030	622780	-	-	retinitis pigmentosa(色素性網膜炎)
2255	HIRA	NM_003325.3	658	agcctcatgcagcgtggataaca	4815	668985	transcription_regulat or	transcription factor	-
2256	TYK2	NM_003331.3	3015	ttccacaagcgctatttgaaaaa	107139	517327	kinase_related	non-membrane spanning protein tyrosine kinase	-

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2257	UBE2B	NM_003337.2	570	tacttttaaacactagtaataagaat	231083	616570	-	ubiquitin-protein ligase	-
2258	UBE2D1	NM_003338.3	575	cccttagtaccagatattgcaca	231111	756338	-	ubiquitin-protein ligase	-
2259	UBE2G1	NM_003342.3	832	ttgcccctgtgtgaagaaagc	231154	616623	-	-	-
2260	UCN	NM_003353.2	451	cagagcagaacccgcatcatc	169659	710954	signal_transduction gpcr	neuropeptide hormone	-
2261	UCP2	NM_003355.2	1018	acctcccttgcacattcattct	181506	574554	-	uncoupling protein	obesity(肥満)
2262	UCP2	NM_003355.2	1090	tggtaagacagagatacatgaac	181507	574556	see also 2261 line	-	-
2263	UGCG	NM_003358.1	562	atgatccagccattgatgtatgt	211927	606698	-	transferase, transferring glycosyl groups	-
2264	UGCG	NM_003358.1	833	tgcacaccttagagcaggatatatt	211932	606711	see also 2263 line	-	-
2265	UGCG	NM_003358.1	834	gccacaccttagagcaggatatatt	211933	606712	see also 2263 line	-	-
2266	UGCG	NM_003358.1	1142	tcctgtacataataattgtgagc	211946	606723	see also 2263 line	-	-
2267	UGDH	NM_003359.1	1320	cactgagtgaggacatgtttaagg	220826	607861	-	kinase	-
2268	USP4	NM_003363.2	151	ggcgagtggtatctcttattgaca	189875	583678	-	ubiquitin-specific protease	-
2269	USP4	NM_003363.2	683	cagggtcagggtcagtaattga	189891	583692	see also 2268 line	-	-
2270	USP4	NM_003363.2	685	gggtcagggtcagtaattgagc	189892	583693	see also 2268 line	-	-
2271	UQCRC2	NM_003366.1	518	gcctcagctaaagattgacaaag	184906	579161	-	ubiquinol- cytochrome c reductase	-
2272	USF2	NM_003367.1	481	gtcagcagggaggacacgatttgc	13882	702828	transcription_regulat or	USF43/USF44 complex	breast cancer(乳癌)
2273	UVRAG	NM_003369.2	327	cocggaaacattgttaataagaat	322266	802214	-	-	-
2274	UVRAG	NM_003369.2	739	tgcgaattctacgatgtcttct	322286	802226	see also 2273 line	-	-
2275	VBPI	NM_003372.3	434	aaggtcagatttcctgaataaaa	137010	542220	-	protein binding	-
2276	VBPI	NM_003372.3	730	gtcaatatggccagggtttataa	137020	542232	see also 2275 line	-	-
2277	VEGF	NM_003376.3	1577	aagatccgcagacgtgtgaatgt	168110	566274	signal_transduction cell_cycle	vascular endothelial growth factor receptor ligand	bladder transitional cell carcinoma(膀胱移行上 皮癌)、rheumatoid arthritis(関節リウマチ)、 colorectal cancer(大腸癌)、bladder cancer(膀胱 癌)、neuroblastoma(神経芽細胞腫)、prostate cancer(前立腺癌)、colorectal cancers(結腸直腸 癌)、astrocytic tumors(星状腫瘍)
2278	VEGF	NM_003376.3	1580	atccgcagacgtgtgaatgttcc	168111	566275	see also 2277 line	-	-
2279	VEGF	NM_003376.3	1627	aagcgagcagcagcttgattgtaa	168112	566277	see also 2277 line	-	-
2280	VRK1	NM_003384.1	516	aagttttctcggaaacactgtct	107469	517575	kinase_related	-	-
2281	VRK1	NM_003384.1	786	cccatcaagacgtgtgtgatttgg	107475	517583	see also 2280 line	-	-
2282	VRK1	NM_003384.1	789	atcaagacgtgtgtgattgaaa	107476	517584	see also 2280 line	-	-
2283	VSNL1	NM_003385.3	712	accagattacactggatgaattc	154394	554848	-	-	-
2284	VSNL1	NM_003385.3	749	gagcgaccttcattgtattac	154395	554849	see also 2283 line	-	-
2285	VSNL1	NM_003385.3	750	agcgaccttcattgtattact	154396	554850	see also 2283 line	-	-
2286	WASPIP	NM_003387.3	438	cggccaacacagggataatgattct	120135	676041	-	-	-

2287	WEE1	NM_003390.2	2401	gtcttgggtcacatgatataa	107634	517727	kinase_related, cell_cycle	protein tyrosine kinase	-
2288	WEE1	NM_003390.2	2405	ttgtttcacatggatataaacc	107635	517728	see also 2287 line		
2289	WEE1	NM_003390.2	3028	atctccagctattggaagaata	107655	517749	see also 2287 line		
2290	WNT8B	NM_003393.2	273	tgccagagtggtattgaagaat	255330	639736	signal transduction	signal transducer	-
2291	WNT8B	NM_003393.2	274	gcccagagtggtattgaagaat	255331	639737	see also 2290 line		
2292	WNT8B	NM_003393.2	275	cccagagtggtattgaagaatgc	255332	639738	see also 2290 line		
2293	WNT10B	NM_003394.2	417	gtcgggtctaaagcaatgagatt	255414	639565	signal transduction	signal transducer	-
2294	XPO1	NM_003400.2	41	gocagcaattatgacaaatttag	271534	750091	-	-	-
2295	XPO1	NM_003400.2	84	ctgcttgatttcagccaaaact	271536	750092	see also 2294 line		
2296	XPO1	NM_003400.2	129	gtgtgaattgcttatccatgg	271537	750096	see also 2294 line		
2297	XPO1	NM_003400.2	384	gacccaactgtgtagagaaga	271547	750105	see also 2294 line		
2298	XPO1	NM_003400.2	386	cccaactgtgtagagaagaaga	271548	750106	see also 2294 line		
2299	XPO1	NM_003400.2	469	aacattggccaaactttatcagt	271552	750108	see also 2294 line		
2300	XPO1	NM_003400.2	2428	aaccagaaagtgcttagtactatg	271615	750180	see also 2294 line		
2301	XPO1	NM_003400.2	2486	agctgaataaccctcaaatatttg	271624	750186	see also 2294 line		
2302	XPO1	NM_003400.2	2855	aacaatgcagtcacaaattcttg	271642	750195	see also 2294 line		
2303	XPO1	NM_003400.2	3011	tgtcacaagtaagctcttttga	271647	750197	see also 2294 line		
2304	YY1	NM_003403.3	486	ctcggggagacaccctctacatcg	13962	449865	transcription_regulat	zinc binding	-
2305	YY1	NM_003403.3	1376	ctcataaaggctgcacaaagatg	13968	449870	see also 2304 line		
2306	ZIC1	NM_003412.2	1431	cccaaaaagtgtgcacacaaac	331657	450315	transcription_regulat	DNA binding	-
2307	ZIC1	NM_003412.2	2026	gtgcgctctctccaaatttaac	331666	450320	see also 2306 line		
2308	ZIC3	NM_003413.2	1764	ctgcgaagtccagctatgaattct	44007	471080	transcription_regulat	DNA binding	situs inversus(内臓逆位)、heterotaxy(ヘテロタク シス)
2309	ZIC3	NM_003413.2	1787	tccactccaccgctatagcttc	44009	471081	see also 2308 line		
2310	ZNF9	NM_003418.1	511	tgcctataggtgtgtgaaactgg	15678	457329	-	transcription factor	myotonic dystrophy(筋緊張性ジストロフィー)、 diabetes(糖尿病)
2311	ZNF9	NM_003418.1	552	cagcaagacaaagtgaagtcaact	15680	457332	see also 2310 line		
2312	ZNF9	NM_003418.1	558	gacaagtgaagtcaactgttacc	15681	457333	see also 2310 line		
2313	ZNF9	NM_003418.1	603	tgcacgggaatgcacaaattgagg	15682	457334	see also 2310 line		
2314	ZNF76	NM_003427.3	1692	cgcagcccgctcacaataattacc	45907	776624	transcription_regulat	DNA binding	-
2315	ZNF76	NM_003427.3	1695	agccgctcacaataattaccctct	45908	776625	see also 2314 line		
2316	ZNF189	NM_003452.2	509	aaccacaggggtgaatagtaca	14753	481820	transcription_regulat	-	-
2317	ZNF189	NM_003452.2	516	gggtgaatagtacagaataca	14755	481822	see also 2316 line		
2318	ZNF189	NM_003452.2	748	gtccgcaaggcccaatttcattca	14759	481832	see also 2316 line		
2319	ZNF198	NM_003453.2	921	gagatagaacttaattgattaca	161558	669540	transcription_regulat	-	stem-cell leukemia(幹細胞性白血病)
2320	ZNF198	NM_003453.2	1887	atggaaaactgaacaaattgtact	161569	669564	see also 2319 line		
2321	ZNF198	NM_003453.2	1962	atggatataatgagccatttgt	161572	669573	see also 2319 line		
2322	ZNF198	NM_003453.2	2167	atctccaaatggccagttttag	161574	669579	see also 2319 line		

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2323	ZNF198	NM_003453.2	2312	aagaagttcattgcatagttac	161579	669584	see also 2319 line		
2324	ZNF198	NM_003453.2	2315	aagttcattgcatagttacata	161580	669585	see also 2319 line		
2325	ZNF198	NM_003453.2	2852	tgcaaacctttaacaatgacaaa	161599	669606	see also 2319 line		
2326	ZNF198	NM_003453.2	2894	cacatgcagacacaaattgtca	161601	669609	see also 2319 line		
2327	ZNF198	NM_003453.2	3404	cagccacgacctcgtactaaaa	161615	669623	see also 2319 line		
2328	ZNF198	NM_003453.2	3454	aggatacagctctcatgtatga	161616	669626	see also 2319 line		
2329	ZNF198	NM_003453.2	3545	gtcaaaactgagcaactgtatga	161619	669631	see also 2319 line		
2330	ZNF198	NM_003453.2	3638	accacagctgagcttaactatgg	161620	669636	see also 2319 line		
2331	ZNF198	NM_003453.2	3877	ctctcagagttgaagaagactatc	161630	669648	see also 2319 line		
2332	ZNF198	NM_003453.2	3891	aagactatctctggaggataaaa	161632	669649	see also 2319 line		
2333	ZNF198	NM_003453.2	3899	ctctggaggataaaaacaactagg	161634	669650	see also 2319 line		
2334	ZNF198	NM_003453.2	4218	ttgaatgctacttctctaaagt	161643	669656	see also 2319 line		
2335	ZNF198	NM_003453.2	4362	ttgtacgggttcttctagtaaaa	161652	669661	see also 2319 line		
2336	ZNF198	NM_003453.2	4367	cgggttcttctagtaaaagatat	161653	669662	see also 2319 line		
2337	ZNF198	NM_003453.2	4368	gggttcttctagtaaaagatat	161654	669663	see also 2319 line	transcription_regulat	
2338	ZNF207	NM_003457.1	230	aagccgtggtgctggtattgtaa	14881	690973	or	zinc binding	
2339	ZNF207	NM_003457.1	231	agccgtggtgctggtattgtaat	14882	690974	see also 2338 line		
2340	ZNF207	NM_003457.1	232	gcccgtggtgctggtattgtaat	14883	690975	see also 2338 line		
2341	ZNF207	NM_003457.1	483	gacgactcttgaacagagaaaca	14894	690987	see also 2338 line		
2342	ZNF207	NM_003457.1	597	ttcaacctcagcagaaggttatatt	14896	690990	see also 2338 line		
2343	ZNF207	NM_003457.1	1092	aaggacctgttggtacagatttc	14900	690993	see also 2338 line		
2344	ZNF207	NM_003457.1	1273	tagtgcaaccagtaagtgtatcc	14907	690998	see also 2338 line		
2345	BSN	NM_003458.1	4000	tgcatacatggagcccaatgaagc	166757	564058	-		
2346	BSN	NM_003458.1	7759	cagccgtgtaggcatcaagaagc	166780	564089	see also 2345 line		
2347	ZP2	NM_003460.1	1609	aacatcaagctggtcttagatga	247161	525051	receptor_activity	coreceptor	
2348	PAX8	NM_003466.2	374	aggatccagccctggagtgatagg	8953	463379	transcription_regulat or, kinase related,		thyroid hypoplasia(甲状腺形成不全症)、 congenital hypothyroidism due to thyroid dysgenesis or hypoplasia(甲状腺發育不全による 先天性甲状腺機能低下症)
2349	STAM	NM_003473.2	422	taggagcatgtgtatcaactgt	252915	673054	receptor_activity	-	
2350	STAM	NM_003473.2	1231	atgggaacctctcatgtgaaaa	252933	673065	signal_transduction	-	
2351	PDHX	NM_003477.1	1267	accgaaggagatcttttagtatt	134537	538609	see also 2349 line	protein binding	
2352	TAF15	NM_003487.2	115	ctggagggtgagcagcaaaagtatt	19887	486586	transcription_regulat or	-	lacticacidemia(乳酸血症)
2353	TAF15	NM_003487.2	116	tgggggtgagcagcaaaagtatt	19888	486587	see also 2352 line		chondrosarcoma(軟骨肉腫)
2354	TAF15	NM_003487.2	281	tgggtatgagatcaaaagcaga	19895	486599	see also 2352 line		
2355	TAF15	NM_003487.2	804	gagggtgtgtctacagatcaagt	19910	486611	see also 2352 line		
2356	ARD1	NM_003491.2	388	caggcctctgagccatgataga	215025	602299	-	N-	
2357	ARD1	NM_003491.2	393	ctctcgagccatgatagaact	215026	602301	see also 2356 line		myopathy, distal, with anterior tibial onset(脛 骨前筋症候群), limb girdle muscular dystrophy(肢帯型筋ジストロフィー), Miyoshi myopathy(ミヨシモイオパシー)
2358	DYSF	NM_003494.2	5201	cagtgagtgaccaggataactac	312260	692110	-		

2359	ACOX2	NM_003500.1	612	gccaccacaggagttgtgataca	224141	612283	-	electron transfer flavoprotein	-
2360	CDC7	NM_003503.2	969	gtccagcgtctctgtttttggaga	76107	497704	kinase_related, cell_cycle	protein serine/threonine kinase	-
2361	CDC45L	NM_003504.3	633	ttgactacagcagcagtgatgaatat	301651	670073	cell_cycle	-	-
2362	CDC45L	NM_003504.3	635	gactacagcagcagtgatgaatatca	301652	670074	see also 2361 line	-	-
2363	FZD6	NM_003506.2	1682	ctgaccacagaattggctttattt	242598	630700	receptor_activity, gpcr, signal_transduction	frizzled receptor	-
2364	NME5	NM_003551.2	591	aggactcacagcagctttgtaagc	94873	510398	kinase_related, apoptosis	nucleoside- diphosphate kinase	-
2365	PIP5K1B	NM_003558.1	877	caggctattacatgaatttaaac	207565	597572	kinase_related	-	-
2366	PIP5K2B	NM_003559.3	707	aagatcaaggtggacacatcatct	207644	597681	kinase_related, signal_transduction	-	-
2367	PLA2G6	NM_003560.1	2391	tggctcgccatccagctacttcaga	199556	591471	-	calcium- independent cytosolic phospholipase A2	-
2368	PLA2G6	NM_003560.1	2486	gagaccgaggctctacatctatga	199559	591472	see also 2367 line	oxoglutarate/malat e antiporter	-
2369	SLC25A11	NM_003562.3	580	accagcgccgtggctacaaaaat	181005	574244	-	-	-
2370	SLC25A11	NM_003562.3	582	cagcgccgtggctacaaaaatgt	181006	574245	see also 2369 line	-	-
2371	VAPA	NM_003574.4	365	tagctacataaatcttaaatg	292711	662451	kinase_related	-	-
2372	VAPA	NM_003574.4	1018	aaggtagcacattcgataaac	292729	662464	see also 2371 line	-	-
2373	STK24	NM_003576.2	291	aggtgttcaaaagcattgacaaat	101593	515606	kinase_related, signal_transduction	protein tyrosine kinase	-
2374	RAD54L	NM_003579.2	2029	ttgtaatcatccagctctaatct	37467	465311	-	-	-
2375	RAD54L	NM_003579.2	2293	tggcacgatgtccattaagaagc	37477	465319	see also 2374 line	-	-
2376	NSMAF	NM_003580.2	1502	ctggatggtgcaacggatttaa	253666	701836	signal_transduction	receptor signaling protein	-
2377	NSMAF	NM_003580.2	1503	tggatggtgcaacggattttaa	253667	701837	see also 2376 line	-	-
2378	NSMAF	NM_003580.2	1507	tggtagaacgattttaaagagt	253668	701838	see also 2376 line	-	-
2379	DOC2B	NM_003585.1	681	aggcaaaataagctcgaacacaaa	172619	656488	-	-	-
2380	DHX16	NM_003587.3	2563	caccacgtctggtcgaagatgg	59642	483537	cell_cycle	RNA helicase	-
2381	CUL4B	NM_003588.2	988	aagttagatcaagaactttaa	279003	674956	cell_cycle	molecular_function unknown	-
2382	CUL4B	NM_003588.2	1478	atggtgaagcaattgatagaagt	279017	674972	see also 2381 line	-	-
2383	CUL3	NM_003590.1	501	tgcataacaaatggttttgata	306105	674843	-	-	-
2384	CUL3	NM_003590.1	535	aagctctacactgactaagaga	306107	674844	see also 2383 line	-	-
2385	CUL3	NM_003590.1	1230	tagctggtgccaatggttga	306145	674865	see also 2383 line	-	-
2386	CUL3	NM_003590.1	1470	gtctctgaataacctctcattat	306150	674878	see also 2383 line	-	-
2387	CUL3	NM_003590.1	1595	aagatgatttgaacgttattat	306152	674883	see also 2383 line	-	-
2388	CUL3	NM_003590.1	1733	aaggaattgttaggtgatatgagc	306158	674886	see also 2383 line	-	-

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2389	CUL3	NM_003590.1	2218	tcctcgcctgtgtgtaaaccaac	306167	674895	see also 2383 line	
2390	CUL3	NM_003590.1	2219	ccctcgcctgtgtgtaaaccaaca	306168	674896	see also 2383 line	
2391	CUL3	NM_003590.1	2525	taccaagtcagtggttattaaag	306181	674901	see also 2383 line	
2392	CUL3	NM_003590.1	2534	cagttgtatttaagaagaactatt	306182	674903	see also 2383 line	
2393	CUL3	NM_003590.1	2558	aaggacttattgagagagaatat	306184	674904	see also 2383 line	
2394	CUL3	NM_003590.1	2591	cacctgaggatgcgaagtatac	306185	674906	see also 2383 line	
2395	CUL3	NM_003590.1	2594	ctgaggatgcgaagtatacaca	306187	674907	see also 2383 line	
2396	CUL3	NM_003590.1	2596	gaggatgcgaagtatacacaata	306188	674908	see also 2383 line	
2397	CUL3	NM_003590.1	2597	aggatgcgaagtatacacatat	306189	674909	see also 2383 line	
2398	CUL2	NM_003591.2	1092	ggcaaatatgactcttactcc	306043	674800	cell cycle,	-
2399	CUL2	NM_003591.2	1892	caggtgaagtaaaatgaactat	306078	674825	see also 2398 line	
2400	CUL2	NM_003591.2	2074	atgattaaacatgattcagaata	306085	674832	see also 2398 line	
2401	CUL2	NM_003591.2	2346	tcacagatcagcatgattgaaga	306097	674835	see also 2398 line	
2402	CUL1	NM_003592.2	779	ttgggtgccttgatgatgacg	233081	533932	cell cycle,	-
2403	CUL1	NM_003592.2	1006	ttgcaaggccctacgttaaca	233088	533940	see also 2402 line	
2404	CUL1	NM_003592.2	1014	ggccctacgttaacagtgataa	233089	533941	see also 2402 line	
2405	CUL1	NM_003592.2	1110	cagaaccacgttactgaatatat	233096	533944	see also 2402 line	
2406	CUL1	NM_003592.2	1228	aagtcctattgaataaacattg	233099	533946	see also 2402 line	
2407	CUL1	NM_003592.2	1309	gacgcattataactctgtatct	233103	533948	see also 2402 line	
2408	CUL1	NM_003592.2	1339	aggatggccttaggagaattgaaa	233104	533951	see also 2402 line	
2409	CUL1	NM_003592.2	1539	aaggcttggtgccttcataaa	233107	533956	see also 2402 line	
2410	CUL1	NM_003592.2	1540	agccttggtgccttcataaac	233108	533957	see also 2402 line	
2411	CUL1	NM_003592.2	1541	ggcttggtgccttcataaaca	233109	533958	see also 2402 line	
2412	CUL1	NM_003592.2	1544	ttgttgctgccttcataaaca	233110	533959	see also 2402 line	
2413	CUL1	NM_003592.2	1546	gtgtgccttcataaacaaca	233111	533960	see also 2402 line	protein-tyrosine sulfotransferase
2414	TPST1	NM_003596.2	521	atcaaaagatatgccttaata	217351	605333	-	-
2415	TPST1	NM_003596.2	1026	gtgcattgtggttcactatgaac	217369	605353	see also 2414 line	
2416	TPST1	NM_003596.2	1061	atcctgaacgggtggatgagaaca	217370	605355	see also 2414 line	
2417	OGT	NM_003605.3	263	gagttggcacatgcagaatataca	134293	601969	signal_transduction	-
2418	OGT	NM_003605.3	4161	ttgaaagaggaacgcatttttga	134313	601981	see also 2417 line	
2419	OGT	NM_003605.3	5561	agcagtaacacagctcttaatat	134373	602035	see also 2417 line	
2420	OGT	NM_003605.3	5946	tgccccagaacccgtatattttt	134392	602056	see also 2417 line	
2421	OGT	NM_003605.3	6326	cagatgtggagcattatgcagc	134401	602065	see also 2417 line	
2422	RAE1	NM_003610.2	730	tgcagagaggggcctgat'gtct	53849	785562	-	RNA binding
2423	RAE1	NM_003610.2	736	gagggcctgatgtgtatcagc	53851	785564	see also 2422 line	
2424	RAE1	NM_003610.2	1096	aacttcggaacaggttagatcagc	53867	785574	see also 2422 line	
2425	OFD1	NM_003611.1	361	atgaactgcgcaaaaagctatac	282704	796124	-	molecular_function unknown
2426	SEMA7A	NM_003612.1	546	aactccctggttctgttgagg	313517	684674	receptor_activity	-
2427	SEMA7A	NM_003612.1	584	caccatccgggaagcagggaataca	313519	684675	see also 2426 line	
2428	CILP	NM_003613.1	2720	atgagagatccacgggttaaaaag	196111	783162	phosphatase	-
2429	SIP1	NM_003616.1	186	gacttgacgggaaggtttc-gatcc	47234	689180	-	pre-mRNA splicing factor



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2430	SIP1	NM_003616.1	656	aactagtgcttggaatatcga	47244	689193	see also 2429 line				
2431	PRSS12	NM_003619.2	2636	agccttggtacottggataaaa	182532	575884	receptor activity	trypsin	mental retardation(精神遅滞)		
2432	PPFIA2	NM_003625.2	1442	tggaaatattggaagacgtatga	318313	795621	-	-	-		
2433	PPFIA2	NM_003625.2	2008	gtgacactgaaatgtctgatatt	318332	795635	see also 2432 line				
2434	PPFIA2	NM_003625.2	3887	aagactgcagaggtagacaact	318363	795682	see also 2432 line				
2435	PPFIA2	NM_003625.2	3909	tcactgttcgacacatactcatg	318364	795683	see also 2432 line				
2436	PPFIA2	NM_003625.2	3913	ctgttcgacatactactgttga	318365	795684	see also 2432 line				
2437	PEX3	NM_003630.1	245	accagagacttgcaaatgaca	309872	688640	-	-	Zellweger syndrome(ツェルウェーガー症候群)		
2438	PEX3	NM_003630.1	285	aacactgagagagccctaattgc	309873	688641	see also 2437 line				
2439	PEX3	NM_003630.1	545	aacagcagattattcaagatt	309884	688649	see also 2437 line				
2440	PEX3	NM_003630.1	1013	gtgtcagcctgccttagctaag	309899	688665	see also 2437 line				
2441	PEX3	NM_003630.1	1018	agcctgcttagctaaataat	309900	688666	see also 2437 line				
2442	PARG	NM_003631.1	1965	ttgcactctgtgcgaataatt	202212	596060	-	-			
2443	PARG	NM_003631.1	1968	cactgtgtgcgaataattgc	202213	596061	see also 2442 line				
2444	PARG	NM_003631.1	2111	atgaaatcggagtagtattagta	202219	596066	see also 2442 line				
2445	PARG	NM_003631.1	2128	tagttaccagacataacttca	202220	596068	see also 2442 line				
2446	PARG	NM_003631.1	2359	agggatgctacaggtggttttg	202223	596077	see also 2442 line				
2447	PARG	NM_003631.1	2363	atgtctacaggtggttttgcaaa	202224	596078	see also 2442 line				
2448	PARG	NM_003631.1	2364	tgctacaggtggttttgcaaat	202225	596079	see also 2442 line				
2449	PARG	NM_003631.1	2653	cagagctacatcgtcagatttg	202232	596084	see also 2442 line				
2450	PARG	NM_003631.1	2656	acgtacatcgtcagatttgvc	202233	596085	see also 2442 line				
2451	ENC1	NM_003633.1	1712	cagtagtgagtgccaaacttaag	116951	522569	-	actin binding	Alzheimer disease(アルツハイマー病)、Aarskog-		
2452	NIPSNAP1	NM_003634.1	1019	ctggagatgaaatgtctactata	331855	697952	-	heparin N-deacetylase/N-sulfotransferase	Scott syndrome(Aarskog-Scott症候群)		
2453	NDST2	NM_003635.2	947	taccatggccgctatgtttgg	217211	605629	-	-	-		
2454	NDST2	NM_003635.2	1150	ggagctaccagaggaatcctot	217214	605636	see also 2453 line				
2455	NDST2	NM_003635.2	1626	ttctcgggcaagttctatcac	217218	605648	see also 2453 line				
2456	NDST2	NM_003635.2	2836	tacaacgtggtgacttactac	217242	605664	see also 2453 line				
2457	IKBK	NM_003639.2	1164	aggccagggagatatotacaag	254494	669016	apoptosis, kinase_related, transcription_regulat	signal transducer	-		
2458	IKBKAP	NM_003640.2	1637	tgccagtaaccagatttctgtt	219429	721263	or	signal transducer	-		
2459	HAT1	NM_003642.1	523	aaggctgacatgacatgtagagg	131657	721541	kinase_related	signal transducer	-		
2460	HAT1	NM_003642.1	537	atgtagaggttttgagaatc	131658	721542	-	protein binding	-		
2461	HAT1	NM_003642.1	540	tagaggttttgagaatcag	131659	721543	see also 2459 line				
2462	HAT1	NM_003642.1	630	atggcactacttcttagtttg	131661	721547	see also 2459 line				
2463	HAT1	NM_003642.1	715	tactatgttaccacacacaaac	131664	721551	see also 2459 line				
2464	HAT1	NM_003642.1	795	tgctcaacttctgaaacagttc	131665	721553	see also 2459 line				
2465	HAT1	NM_003642.1	836	ttctacagttcttgatatca	131668	721556	see also 2459 line				
2466	HAT1	NM_003642.1	1017	cgttagaagggtttatgaattc	131678	721564	see also 2459 line				

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2467	DGKZ	NM_003646.1	921	gcgcctggagacccttcacatc	78230	597997	kinase_related	diacylglycerol kinase	-
2468	DGKZ	NM_003646.1	1513	cagccgctttcggagataagatgt	78233	598010	see also 2467 line		
2469	DGKZ	NM_003646.1	1515	gcgcgtttcggagataagatgttc	78234	598011	see also 2467 line		
2470	DGKZ	NM_003646.1	1516	cgcgtttcggagataagatgttct	78235	598012	see also 2467 line		
2471	DGKE	NM_003647.1	674	atcagatgcgtataagacaaaaa	78182	569597	kinase_related	diacylglycerol kinase	-
2472	COPS3	NM_003653.2	448	aggaattggcatccttaagcaag	331885	703717	-	-	-
2473	COPS3	NM_003653.2	610	tgagcctatgatgcaaacact	331891	703722	see also 2472 line		
2474	COPS3	NM_003653.2	613	agcctatgatgcaaacactttt	331892	703723	see also 2472 line		
2475	COPS3	NM_003653.2	741	gtcatatcatgttggaatcatat	331899	703727	see also 2472 line		
2476	CBX4	NM_003655.1	1563	acctggatgaaccatagacttg	17913	450483	transcription_regulat	transcription co-repressor	-
2477	BCAS1	NM_003657.1	1448	tggcgtttctagacaaatgtca	331936	740726	-	-	breast cancer(乳癌)
2478	AGPS	NM_003659.1	1061	gtcaaggacctcgtatgtcaaca	217144	671981	-	electron transfer flavoprotein	chondrodysplasia(軟骨異形成症)
2479	AGPS	NM_003659.1	1217	gagttagcctgttaagagaatt	217151	671988	see also 2478 line		
2480	AP3B1	NM_003664.3	1262	aactgattcgaactatgatcaaga	267605	556653	-	protein transporter	-
2481	AP3B1	NM_003664.3	1331	atcaactctcttcgagaatttc	267606	556657	see also 2480 line		
2482	AP3B1	NM_003664.3	1804	atctcgcaagatgatcaaac	267619	556669	see also 2480 line		
2483	AP3B1	NM_003664.3	1808	cggcaagtatgatcaaacactag	267620	556671	see also 2480 line		
2484	AP3B1	NM_003664.3	1847	aagattattaggcagcttatgtg	267624	556674	see also 2480 line		
2485	AP3B1	NM_003664.3	1982	tgacacttatctatcatctca	267631	556679	see also 2480 line		
2486	AP3B1	NM_003664.3	1991	atctcatatctcaacattcaag	267632	556680	see also 2480 line		
2487	AP3B1	NM_003664.3	2017	ctgggtacctggaattatctaat	267634	556684	see also 2480 line		
2488	AP3B1	NM_003664.3	2018	tggtacctggaattatctaat	267635	556685	see also 2480 line		
2489	AP3B1	NM_003664.3	2019	gggtacctggaattatctaatg	267636	556686	see also 2480 line		
2490	AP3B1	NM_003664.3	2970	atgggtattgaacttttgtattc	267669	556707	see also 2480 line		
2491	BLZF1	NM_003666.2	1104	agggtaatggcagatgagtaaac	275556	716890	transcription_regulat	transcription co-repressor	-
2492	GPR49	NM_003667.2	878	ttgtaggcaacctctcttatt	239986	624966	receptor activity, signal transduction	protein-hormone receptor	-
2493	GPR49	NM_003667.2	1368	tggtttacatggttaactcaact	240005	624989	gpcr	see also 2492 line	
2494	GPR49	NM_003667.2	1376	atggttaactcaactaaatta	240006	624990	see also 2492 line		
2495	GPR49	NM_003667.2	1555	atggacgaccttcaagaaga	240011	624998	see also 2492 line		
2496	MAPKAPK5	NM_003668.2	479	aacatagttcagattattgaagt	90141	507866	kinase related, signal transduction	-	-
2497	BHLHB2	NM_003670.1	385	gagacgtgacoggattaaagagt	1504	458374	transcription_regulat	transcription factor	-
2498	DENR	NM_003677.2	162	aggaacagtgccaagtttagatgc	58238	478424	-	-	-
2499	MADD	NM_003682.2	215	toctcgttacttgactatctag	219558	607005	kinase related, signal transduction	-	-
2500	MADD	NM_003682.2	927	gagattgagcctggatctatcgc	219572	607015	see also 2499 line		

2501	MADD	NM_003682.2	2849	tggcctaatactactaattgaga	219609	607059	see also 2499 line	
2502	MADD	NM_003682.2	3319	ttgccagaccactactatagt	219619	607066	see also 2499 line	
2503	MADD	NM_003682.2	3324	cagaccactactatagaaga	219620	607067	see also 2499 line	
2504	MADD	NM_003682.2	3327	accactactatagtaagaacc	219622	607068	see also 2499 line	
2505	EXO1	NM_003686.3	816	tgcacagcccaacaaagtaata	26281	459321	-	-
2506	CASK	NM_003688.1	85	aagggtcccttcagtggtgacg	75315	497205	kinase related	transferase
2507	CASK	NM_003688.1	158	atgtagccaggttcacatcaagt	75322	497210	see also 2506 line	
2508	CASK	NM_003688.1	183	aggttaagtcacagaagatctaa	75323	497211	see also 2506 line	
2509	CASK	NM_003688.1	184	gggttaagtcacagaagatctaaa	75324	497212	see also 2506 line	
2510	CASK	NM_003688.1	213	agccagatctgtcatatgtcga	75325	497213	see also 2506 line	
2511	CASK	NM_003688.1	809	cagctgaagagtcactgtttat	75352	497225	see also 2506 line	
2512	CASK	NM_003688.1	956	ccgctgtgtcaagtcacaaattc	75356	497229	see also 2506 line	
2513	CASK	NM_003688.1	1485	cagagttcggctgtgacagtttc	75367	497243	see also 2506 line	
2514	CASK	NM_003688.1	1602	caggcaaggtcacacttoatttg	75373	497250	see also 2506 line	
2515	CASK	NM_003688.1	1706	ggggaggtattaccttcaagatt	75375	497257	see also 2506 line	
2516	CASK	NM_003688.1	1707	ggggaggtattaccttcaagattg	75376	497258	see also 2506 line	
2517	CASK	NM_003688.1	1708	gggaggtattaccttcaagattgt	75377	497259	see also 2506 line	
2518	CASK	NM_003688.1	1802	atgttcatagcagcactacaatt	75379	497262	see also 2506 line	
2519	CASK	NM_003688.1	1859	aaggacgacagatctatgtaaga	75382	497265	see also 2506 line	
2520	CASK	NM_003688.1	1870	atctatgaagagcacaatttga	75383	497266	see also 2506 line	
2521	CASK	NM_003688.1	1874	atgtaagagcacaatttgaatt	75384	497267	see also 2506 line	
2522	CASK	NM_003688.1	1957	gacatcatcagattattagtaa	75385	497268	see also 2506 line	
2523	CASK	NM_003688.1	1997	ggcagggtaactggaaaactcc	75387	497269	see also 2506 line	
2524	CASK	NM_003688.1	2674	cactatttcacttcacaattat	75399	497275	see also 2506 line	
2525	STK16	NM_003691.1	595	ggggcagccagtttaattgagat	101404	515492	kinase related	protein kinase CK2
2526	TNFSF11	NM_003701.2	366	cagagcgagatggatgactaata	167686	564801	receptor activity	arthritis(関節炎)
2527	SLC25A12	NM_003705.2	187	ttggcaggagtagctgatcaaac	152972	553890	-	solute carrier symporter
2528	SLC25A12	NM_003705.2	192	aggagtagctgatcaaaccaagg	152973	553891	see also 2527 line	
2529	KLF7	NM_003709.1	325	tggcaggtgttgcttagttatagt	5984	461071	transcription_regulat or	zinc binding
2530	KLF7	NM_003709.1	328	acgtgttgcttagttatagata	5985	461073	see also 2529 line	
2531	KLF7	NM_003709.1	993	aacgggtgcccggaaagttatag	6000	461076	see also 2529 line	
2532	KLF7	NM_003709.1	996	gggtgcccggaaagttatataaaa	6002	461077	see also 2529 line	
2533	KLF7	NM_003709.1	998	gtgccggaaagttatatacaaaa	6003	461078	see also 2529 line	
2534	SPINT1	NM_003710.2	1490	atctccaagaaggtgtgtttgg	293581	585313	-	-
2535	PPAP2A	NM_003711.2	471	ctggctggattgctttttgcaat	196307	589833	phosphatase, kinase related, signal transduction	-
2536	PPAP2B	NM_003713.3	875	gggaattctacccggatctatta	196351	746768	-	-
2537	PPAP2B	NM_003713.3	876	gggaattctacccggatctattac	196352	746769	see also 2536 line	
2538	VDP	NM_003715.1	1778	cagtttgtccaaggttatgtgc	271264	652866	-	protein transporter
2539	CADPS	NM_003716.2	2357	ctcttccaacccctgaactttg	305453	704207	-	-
2540	CADPS	NM_003716.2	2380	accagcttccctctttggagtg	305454	704208	see also 2539 line	

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2541	CADPS	NM_003716.2	3281	tgcccaactgttgtagatag	305475	704226	see also 2539 line		
2542	CADPS	NM_003716.2	3282	gcccacattgttagatatgt	305476	704227	see also 2539 line		
2543	CADPS	NM_003716.2	3375	aagatttaaccagtaacctacc	305480	704233	see also 2539 line		
2544	CADPS	NM_003716.2	3733	ttcgagtcaccacagtaaatgc	305486	704241	see also 2539 line		
2545	CADPS	NM_003716.2	3736	gagtcacacagtaaatgcacc	305487	704242	see also 2539 line		
2546	CADPS	NM_003716.2	4037	ggcgaacgctacgtgacttgc	305493	704251	see also 2539 line		
2547	PD88B	NM_003719.1	780	tgtctgtataatgaactgcttc	161941	589917	signal transduction	signal transducer	-
2548	PD88B	NM_003719.1	783	ttgtataatgaactgattcaaa	161942	589918	see also 2547 line		
2549	PD88B	NM_003719.1	1786	ttctctggtttggagtatgga	161975	589928	see also 2547 line		
2550	PD88B	NM_003719.1	2187	aacgctgogcgaagctattattg	161980	589934	see also 2547 line		
2551	PTCH2	NM_003738.2	434	ctgccagtaagtcgaagtatca	245881	633275	receptor activity	patched receptor	-
2552	PTCH2	NM_003738.2	436	gccagtaagtcgaagtatcaact	245882	633276	see also 2551 line		
2553	KCNK5	NM_003740.2	1191	ctccaaggagtcgaactcttca	261320	644805	channel	voltage-gated ion channel	-
2554	ABCB11	NM_003742.2	3264	atcagctgcacgctttttcaac	69636	491776	-	sodium-exporting ATPase	intrahepatic cholestasis(肝内胆汁鬱滞)
2555	ABCB11	NM_003742.2	3267	agctgcacgctttttcaactgc	69637	491777	see also 2554 line		
2556	ABCB11	NM_003742.2	3819	ggccattgtacagatcctcaaaa	69655	491789	see also 2554 line		
2557	ABCB11	NM_003742.2	3820	gccattgtacagatcctcaaat	69656	491790	see also 2554 line		
2558	ABCB11	NM_003742.2	3824	ttgtacagatcctcaaatcttg	69657	491791	see also 2554 line		
2559	NCOA1	NM_003743.3	716	tgtacacaaatcaactagtaaat	111936	450798	receptor activity, transcription_regulat or,		-
2560	NCOA1	NM_003743.3	1220	cocacacaaagttaactttgc	111950	450813	see also 2559 line		
2561	NCOA1	NM_003743.3	1224	caccaagttaactttgctacc	111951	450814	see also 2559 line		
2562	NCOA1	NM_003743.3	1551	agccaattgttccttaaaccaag	111965	450820	see also 2559 line		
2563	NCOA1	NM_003743.3	3708	tcacacaaactatggtacaaatc	112030	450870	see also 2559 line		
2564	NUMB	NM_003744.3	2146	aacctttctccagtgacttaca	320780	684360	-	transferase, transferring glycosyl groups	-
2565	TNKS	NM_003747.1	2639	atcttatggcgatgtgacatag	136776	649805	-		
2566	TNKS	NM_003747.1	2881	aggccttacctactctgttttaa	136782	649816	see also 2565 line		
2567	TNKS	NM_003747.1	3174	ttggctgatgggtcatgaaga	136787	649820	see also 2565 line		
2568	EIF3S8	NM_003752.2	284	atccgtaatgccatgaagattcg	56768	476258	-	translation initiation factor	-
2569	SLC4A4	NM_003759.1	281	tgcagaacgcacatccgattcatot	256978	642809	-		proximal renal tubular acidosis(近位尿管性アシドーシス)
2570	SLC4A4	NM_003759.1	283	cagaacgcacatccgattcatcttg	256979	642810	see also 2569 line		
2571	SLC4A4	NM_003759.1	1979	ttctactgacatgaccataata	257039	642832	see also 2569 line		
2572	SLC4A4	NM_003759.1	3171	atggaacagcaaccttctctaag	257065	642843	see also 2569 line		
2573	EIF4G3	NM_003760.2	4131	aacaggactttttcaaaaggtttt	49404	473665	-	-	-
2574	VAMP4	NM_003762.1	506	atgtggcgctggatgcaaaat	302771	686835	-	-	-
2575	VAMP4	NM_003762.1	508	gtgtggcgctggatgcaaaataa	302772	686836	see also 2574 line		
2576	VAMP4	NM_003762.1	509	tgtgtggcgctggatgcaaaataa	302773	686837	see also 2574 line		

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2577	BECN1	NM_003766.2	1151	gagctctgacagacaaatctaa	311090	676459	apoptosis	-	-
2578	BECN1	NM_003766.2	1362	gcgcctctattccatcaaaacc	311098	676464	see also 2577 line	-	-
2579	DNAH11	NM_003777.1	2135	ttgaatcaacccttggttaatt	78529	499682	-	-	-
2580	DNAH11	NM_003777.1	2139	atcaacccttggttaattcagt	78530	499683	see also 2579 line	-	-
2581	DNAH11	NM_003777.1	2252	gacataccagattcagcttagc	78534	499689	see also 2579 line	-	-
2582	DNAH11	NM_003777.1	3572	agccagacagagagctactatga	78556	499709	see also 2579 line	-	-
2583	DNAH11	NM_003777.1	12350	caggcctggagccgaagctatcc	78790	499902	see also 2579 line	-	-
2584	B4GALT3	NM_003779.2	1179	tcctgttcggtaccaccagaattcc	209958	601557	-	transferring glycosyl groups	-
2585	B4GALT2	NM_003780.2	128	gtggccgtctactctctacttga	209934	601542	-	-	blood group, P system, P2(k) phenotype(P式血液型、P2表現型)
2586	B3GALT3	NM_003781.2	542	ctggatgtactctctatgagtgc	165174	561293	-	-	-
2587	B3GALT2	NM_003783.2	1401	aactgggttgcaacatactgtcc	209803	599067	-	-	-
2588	B3GALT2	NM_003783.2	1700	ccgtttgcacttgggaagatgat	209817	599076	see also 2587 line	-	-
2589	B3GALT2	NM_003783.2	1814	ctgtaaatacacccacctaatta	209821	599079	see also 2587 line	-	-
2590	MBTPS1	NM_003791.1	1433	ttcatggatcatccgtttgttga	182932	576460	-	subtilase	-
2591	MBTPS1	NM_003791.1	1452	ttgacaagggtgggaattaaca	182933	576461	see also 2590 line	-	-
2592	MBTPS1	NM_003791.1	2669	gactgttacaacactctctgtat	182952	576481	see also 2590 line	-	-
2593	EED	NM_003797.2	907	tgcattgacacatgatagcaata	276004	535032	transcription_regulat or	-	-
2594	EED	NM_003797.2	1360	cagagacatacataggaattatg	276015	535048	see also 2593 line	-	-
2595	EED	NM_003797.2	1392	tgcgtatggttaggcgatttgata	276016	535049	see also 2593 line	-	-
2596	EED	NM_003797.2	1396	atggttagtcgatttgatacttt	276017	535051	see also 2593 line	-	-
2597	CTNNA1	NM_003798.1	2091	ttctaaagggtgacaagtgatt	311560	707307	apoptosis	-	-
2598	RNGIT	NM_003800.1	342	gocgtgagcagagaagattctac	196373	588723	phosphatase	protein	-
2599	RNGIT	NM_003800.1	1192	atgttgattgatgacacaaatga	196397	588750	see also 2598 line	-	-
2600	MYOM1	NM_003803.1	533	atgctctcagttttatcattaaa	289302	701690	-	structural constituent of muscle	-
2601	MYOM1	NM_003803.1	760	cgggcctcggcgatgaattgtaa	289309	701700	see also 2600 line	-	-
2602	MYOM1	NM_003803.1	1898	tggtaggggacacaaacttgatc	289339	701734	see also 2600 line	-	-
2603	RIPK2	NM_003821.4	409	ctccgctgctcgacagtgaaaga	99159	513451	kinase_related, apoptosis, signal transduction	signal transducer	-
2604	NR5A2	NM_003822.2	627	ccgagccaatggacttaagctag	422	447382	or, transcription_regulat	steroid hormone receptor	-
2605	NR5A2	NM_003822.2	1139	tcggagtggcccgagtagtagtc	434	447397	see also 2604 line	-	-
2606	NR5A2	NM_003822.2	1636	aacggggatgtgccctataataa	454	447405	see also 2604 line	-	-
2607	NR5A2	NM_003822.2	1637	acggggatgtgccctataataac	455	447406	see also 2604 line	-	-
2608	NAPA	NM_003827.1	163	tggaggctcatccaaatagagg	269474	651932	-	protein transporter	-
2609	NAPA	NM_003827.1	356	ccccaaaggagccactactttt	269475	651940	see also 2608 line	-	-
2610	NAPA	NM_003827.1	667	cagcgccaaagactacttctca	269479	651944	see also 2608 line	-	-
2611	RIOK3	NM_003831.2	462	ggagatagcaaggttccatttcc	283356	667595	kinase_related	-	-

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2612	RIK3	NM_003831.2	888	ctggaatgttgagacaatcact	283363	667605	see also 2611 line		
2613	MATN4	NM_003833.2	1104	gcgcttgtagaacacagattgag	148167	686537	-	-	
2614	PEX11B	NM_003846.1	400	ttgtttccctcatcatgaatt	309856	701962	-	-	
2615	PEX11B	NM_003846.1	423	gagccgtgatccttatgagattc	309857	701963	see also 2614 line		
2616	TIF1	NM_003852.2	468	gccaccaagttggagcattcg	41972	469965	transcription_regulat	-	
2617	TIF1	NM_003852.2	1186	atgtcatgcatcttttctaattgg	41992	469993	see also 2616 line		
2618	TIF1	NM_003852.2	2154	gtcatgtgagagccaattogaat	42023	470027	see also 2616 line		
2619	TIF1	NM_003852.2	2158	tgttgaggccaattcgaataaaa	42025	470028	see also 2616 line		
2620	TIF1	NM_003852.2	2797	ctctaaactgtgcctgattattac	42042	470045	see also 2616 line		
2621	TIF1	NM_003852.2	2965	aagtagccaactgctgtgataaaa	42048	470049	see also 2616 line		
2622	CCNK	NM_003858.2	487	agctogtagtttataaataatgatg	308139	668701	cell_cycle, transcription_regulat or, kinase related	-	
2623	DPM1	NM_003859.1	561	cagattataccgaaagaagttc	212009	600282	-	-	
2624	FGF17	NM_003867.1	88	gagatacccgctctctaattt	169091	565882	signal_transduction	-	transferase, transferring glycosyl groups
2625	FGF17	NM_003867.1	92	atcacccgtctcctaatttaac	169092	565883	see also 2624 line	-	growth factor
2626	FGF17	NM_003867.1	96	ccgctctctaatttaaccagtt	169093	565884	see also 2624 line	-	
2627	IQGAP1	NM_003870.2	1856	caggatagtcagctgtgttatg	121313	526584	signal_transduction	-	calmodulin binding
2628	IQGAP1	NM_003870.2	1857	aggatgagtcagctgtgttatg	121314	526585	see also 2627 line	-	
2629	IQGAP1	NM_003870.2	3296	gtcgtgaggagaaattatgatga	121341	526611	see also 2627 line	-	
2630	IQGAP1	NM_003870.2	3808	tgccacttaagcatcattaatg	121353	526622	see also 2627 line	-	
2631	IQGAP1	NM_003870.2	3809	gccacttaagcatcattaatga	121354	526623	see also 2627 line	-	
2632	IQGAP1	NM_003870.2	4240	acgtttaattgtgctgtatcctc	121369	526639	see also 2627 line	-	
2633	NRP2	NM_003872.1	184	cccgaaccacaaccagaagattgt	206058	636757	receptor activity	-	
2634	NRP2	NM_003872.1	852	gtctggccgagttgcttaataaac	206069	636773	see also 2633 line	-	
2635	NRP2	NM_003872.1	2357	ttgatgacattcggataagcact	206091	636792	see also 2633 line	-	
2636	CD84	NM_003874.1	867	gagtcacgaatctatgatgaat	313572	704292	-	-	
2637	SOC2	NM_003877.3	737	ctggggaagtatgactgttaagt	310206	676363	signal_transduction	-	apoptosis inhibitor
2638	SOC2	NM_003877.3	740	gggaagtatgactgttaataagag	310208	676364	see also 2637 line	-	
2639	WISP1	NM_003882.2	395	cgccagagtagcgcgaataggagt	124967	528826	signal_transduction	-	
2640	HDAC3	NM_003883.2	1020	agcttccctatagtgaatacttc	113623	526388	transcription_regulat or, apoptosis, cell cycle	-	hydrolase
2641	HDAC3	NM_003883.2	1081	cagcacccgcgcagatcagaatcaga	113625	526390	see also 2640 line	-	
2642	HDAC3	NM_003883.2	1084	caccgcgcagatcagaatcagaact	113626	526391	see also 2640 line	-	
2643	HDAC3	NM_003883.2	1124	cagatcgcgcagacaactcttga	113627	526392	see also 2640 line	-	
2644	HDAC3	NM_003883.2	1127	atccgcagacaactcttggaaa	113628	526393	see also 2640 line	-	
2645	HDAC3	NM_003883.2	1128	tccgcagacaactcttggaaaac	113629	526394	see also 2640 line	-	
2646	PROZ	NM_003891.1	1186	ctggtttaaacagatcatgaact	134886	552729	-	-	trypsin
2647	LDB1	NM_003893.3	851	tggacaaaagagatataccattg	30432	461145	transcription_regulat or	-	

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2648	LDB1	NM_003893.3	1081	acgacatgatcggagataagacag	30440	461152	see also 2647 line		
2649	LDB1	NM_003893.3	1207	ctcgtgtggctgtccaattcc	30441	461154	see also 2647 line		
2650	LDB1	NM_003893.3	1239	tacctcgcactctgtgtgatact	30442	461156	see also 2647 line		
2651	LDB1	NM_003893.3	1630	ttgacacgagagacagctttaac	30444	461159	see also 2647 line		
2652	LDB1	NM_003893.3	1633	acgcgcgagagacagcttaacac	30445	461160	see also 2647 line		
2653	SIAT9	NM_003896.2	601	ccggaagtctccagtaagtc	212903	601049	-	-	
2654	SIAT9	NM_003896.2	820	aactactataagagacttatc	212910	601056	see also 2653 line		
2655	SYNJ2	NM_003898.1	1966	agctgggtggcgctgtcttcttat	55246	486544	phosphatase	inositol-1, 4, 5-trisphosphate 5-phosphatase	-
2656	ARHGEF7	NM_003899.2	2391	gcctggatgagacacactctata	295476	707107	signal transduction	-	-
2657	SGPL1	NM_003901.2	1060	gtctgtctacccacagttcc	233923	618275	apoptosis	-	-
2658	SGPL1	NM_003901.2	1441	ttcgggtgagaacggcctattga	233929	618282	see also 2657 line	-	-
2659	FUBP1	NM_003902.2	1753	cagctggacaggttgattatacc	4321	482533	transcription_regulat	-	-
2660	CDC16	NM_003903.2	1512	atgggaacctttgttgacaact	306833	675198	cell cycle	-	-
2661	APBP1	NM_003905.2	606	tagaggatctacgactagataag	235785	621579	signal transduction	-	-
2662	APBP1	NM_003905.2	706	atgattgtatcatagctaaat	235790	621584	see also 2661 line	-	-
2663	APBP1	NM_003905.2	707	tggattgtatcatagctaaat	235791	621585	see also 2661 line	-	-
2664	APBP1	NM_003905.2	711	ttgtgatcatagctaaatatta	235792	621586	see also 2661 line	-	-
2665	APBP1	NM_003905.2	987	tagctgtgccttaaaaggaaatt	235803	621603	see also 2661 line	-	-
2666	APBP1	NM_003905.2	1042	tcgaggacaaattcctgataga	235805	621605	see also 2661 line	-	-
2667	EIF2S2	NM_003908.2	680	atcgagtgttcaacatcatgagg	51216	476535	translation initiation factor	-	-
2668	CPNE3	NM_003909.1	1289	aactctatgaccacaactatttt	172604	730852	kinase_related	transporter	Alzheimer disease(アルツハイマー病)
2669	PRPF4B	NM_003913.3	1671	ccctaatagacacagagaagaatc	98189	512641	kinase_related	-	-
2670	PRPF4B	NM_003913.3	1887	aagccaagcataatctaatagaca	98197	512646	see also 2669 line	-	-
2671	PRPF4B	NM_003913.3	2103	gtgaagtcctagataaaagttac	98209	512652	see also 2669 line	-	-
2672	PRPF4B	NM_003913.3	2465	ctggcattgaacctcttaaaag	98224	512664	see also 2669 line	-	-
2673	CPNE1	NM_003915.2	67	tacatgggcaatcgctttattca	334655	738854	-	-	-
2674	CPNE1	NM_003915.2	124	aagatagatatgttcgaaaaag	334659	738860	see also 2673 line	-	-
2675	CPNE1	NM_003915.2	603	tacgctttggaatctatgacata	172532	771303	see also 2673 line	-	-
2676	CPNE1	NM_003915.2	1089	ggcagtcoccgctgagttggaat	172544	771311	see also 2673 line	-	-
2677	CPNE1	NM_003915.2	1087	cagtcoccgctgagttggaatgc	172545	771312	see also 2673 line	-	-
2678	SGCE	NM_003919.1	308	tagtaatgatccataaacattta	318372	687442	-	-	alcoholism(アルコール依存症)
2679	SGCE	NM_003919.1	356	ccgcacctgagatggtctcgatata	318373	687444	see also 2678 line	-	-
2680	SGCE	NM_003919.1	358	gacctgagatggtctcgatataatc	318374	687445	see also 2678 line	-	-
2681	SGCE	NM_003919.1	359	acctgagatggtctcgatataatc	318375	687446	see also 2678 line	-	-
2682	TIMELESS	NM_003920.1	1565	gtgatgagatgaaccagagaactatt	42235	469184	-	-	-
2683	PHOX2B	NM_003924.2	485	tccagatataaccgcataaggacc	9264	447735	transcription_regulat or	translation regulator	congenital central hypoventilation syndrome(先天性肺胞低換気症候群)、Hirschsprung disease(先天性ヒルシュシュプルング病)

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2684	PHOX2B	NM_003924.2	493	aaccgataagaccacttttgg	9265	447736	see also 2683 line
2685	PHOX2B	NM_003924.2	1268	gtccaaagccgccttagtgaag	9269	447744	see also 2683 line
2686	PHOX2B	NM_003924.2	1269	tgccaaagccgccttagtgaaga	9270	447745	see also 2683 line
2687	MBD3	NM_003926.5	110	cacaggatgtcttttactatag	31556	461411	transcription_regulat or
2688	MBD2	NM_003927.3	949	tacaacattgccaatagacaaa	20356	461396	transcription_regulat or
2689	SCAP2	NM_003930.3	328	ccctccctggagaaattaggaaac	252734	675299	kinase_related, signal_transduction
2690	SCAP2	NM_003930.3	1249	agcgtggtgatgtgattacatt	252757	675328	see also 2689 line
2691	SCAP2	NM_003930.3	1270	ttcttagcaaggaatacaataga	252758	675331	see also 2689 line
2692	WASF1	NM_003931.1	958	ctcagacatcgtggatcatatg	114960	743743	actin polymerizing
2693	WASF1	NM_003931.1	962	gacatcgtggtgacatcattggtg	114961	743744	see also 2692 line
2694	WASF1	NM_003931.1	1133	cagttctctcaggtttgtag	114963	743747	see also 2692 line
2695	AP3D1	NM_003938.4	653	cagagacctggcaaatgacatca	267718	695560	protein transporter
2696	BTRC	NM_003939.2	193	gcgaacccctcaggaaagataata	233011	617583	signal_transduction
2697	BTRC	NM_003939.2	375	cggaaactctcgaagcactatga	233020	617590	see also 2696 line
2698	BTRC	NM_003939.2	1715	tagttcacatcagacacaatcc	233058	617631	see also 2696 line
2699	SLC25A14	NM_003951.2	209	eggatcttccgggaataatcc	181011	574257	-
2700	SLC25A14	NM_003951.2	219	cccgaaatactcattttct	181013	574258	see also 2699 line
2701	MAP3K14	NM_003954.1	487	gtgtgagaatagcgaagctca	89159	507050	kinase_related
2702	MAP3K14	NM_003954.1	915	aactgacagccctcgtgcaatg	89164	507056	see also 2701 line
2703	UBE1C	NM_003968.3	124	aagtcgctggaaccactgtaaag	235388	620484	apoptosis,
2704	UBE1C	NM_003968.3	125	aggtcgctggaaccactgtaaaga	235389	620485	see also 2703 line
2705	UBE1C	NM_003968.3	127	gtcctggaaccactgtaaagag	235390	620486	see also 2703 line
2706	UBE1C	NM_003968.3	207	ctcagttctgttagatacatg	235394	620489	see also 2703 line
2707	UBE1C	NM_003968.3	877	tagagagagcatcacataat	235415	620506	see also 2703 line
2708	UBE1C	NM_003968.3	879	gagagagcatcacataat	235416	620507	see also 2703 line
2709	UBE1C	NM_003968.3	881	gagagagcatcacataat	235417	620508	see also 2703 line
2710	UBE2M	NM_003969.2	941	ctggaagccagtccttacgataa	231256	616555	-
2711	UBE2M	NM_003969.2	942	tggaagccagtccttacgataa	231257	616556	see also 2710 line
2712	UBE2M	NM_003969.2	946	agccagtccttacgataaactcc	231258	616557	see also 2710 line
2713	UBE2M	NM_003969.2	956	tacgataaaactcctaattatg	231259	616559	see also 2710 line
2714	SPAG9	NM_003971.3	574	atgatcataatattatggaaca	320375	730029	-
2715	SPAG9	NM_003971.3	619	cagctctcaggaggtgacaaact	320376	730030	see also 2714 line
2716	SPAG9	NM_003971.3	624	ctcaggaggtgagcaactagaa	320377	730032	see also 2714 line
2717	SPAG9	NM_003971.3	3006	gaggaaatgctctcattccatta	320444	730083	see also 2714 line
2718	SPAG9	NM_003971.3	3419	ttgagccttatgaagcaaatg	320462	730096	see also 2714 line
2719	SPAG9	NM_003971.3	3594	tggaaagttaactcgtgtatg	320466	730098	see also 2714 line
2720	DOK2	NM_003974.1	662	agggcaacttggttcggaacc	130789	567080	signal_transduction
2721	SLC7A6	NM_003983.1	1005	aggtgggacacccctaatttfg	259871	641715	protein binding
2722	SLC7A6	NM_003983.1	1015	acccttaatttgttaacagaaga	259872	641719	see also 2721 line

protein kinase CK2 (rheumatoid arthritis(関節リウマチ))



2723	BBOX1	NM_003986.1	851	ttggagtgattactgtgtattt	222379	609681	-	oxidoreductase, acting on single donors with incorporation of molecular oxygen, incorporation of two atoms of	-
2724	NFKB1	NM_003998.2	589	atggcccatcaccctcaaatatta	7941	446693	transcription_regulat	Nuclear factor NF- kappa-B p50 subunit	rheumatoid arthritis(関節リウマチ)、 atherosclerosis(粥状硬化症)、diabetes mellitus(糖尿病)、diabetes(糖尿病)
2725	NFKB1	NM_003998.2	2712	gagaactttgagcctctctatga	7987	446732	or, apoptosis, signal transduction	-	-
2726	INPP4A	NM_004027.1	3014	ttggaagtcgcaaatatgcattt	317804	742167	see also 2724 line	-	-
2727	INPP4A	NM_004027.1	3015	ttggaagtcgcaaatatgcattt	317805	742168	signal_transduction	-	-
2728	AMPD2	NM_004037.5	775	gacctgcgcacgtctatggatgg	203654	594036	see also 2726 line	-	-
2729	AMPD2	NM_004037.5	786	gtctatggatggcaaatgcaagg	203655	594037	see also 2728 line	-	-
2730	B2M	NM_004048.2	288	oagcaagagactgtcttctctatc	245148	632904	-	MHC class I receptor	carpal tunnel syndrome(手根管症候群)、 hemodialysis-related amyloidosis(アミロイドーシ ス)、diabetes(糖尿病)、multiple myeloma(多発性 骨髄腫)
2731	BDH	NM_004051.2	906	cggactgcctgcgtatgagatg	220848	613589	-	enzyme	-
2732	CAPN5	NM_004055.3	184	gccctatgaggaccagaactact	187615	581352	signal_transduction	-	-
2733	CA8	NM_004056.3	954	ttccgataccctttaaactatc	156295	557361	-	zinc binding	-
2734	CA8	NM_004056.3	955	tcgataccctttaaactatc	156296	557362	see also 2733 line	-	-
2735	CCBL1	NM_004059.2	220	aagatcctggcaagtttcttgg	218155	606278	-	-	-
2736	CCNG1	NM_004060.3	356	acgataatggcctcagaatgact	306623	673685	cell_cycle, kinase_related	cyclin-dependent protein kinase, regulator	-
2737	CCNG1	NM_004060.3	683	aagctactactgcttccaattt	306631	673699	see also 2736 line	-	-
2738	CDH17	NM_004063.2	489	accacgtttctcagtcgaatg	139588	533475	-	transporter	-
2739	CDH17	NM_004063.2	771	aggccagagtgagaattcctca	139596	533489	see also 2738 line	-	-
2740	CDH17	NM_004063.2	1432	aactgtattgatcatgaatgca	139618	533512	see also 2738 line	-	-
2741	CDH17	NM_004063.2	2475	gggcatggcagttgtgtactgc	139651	533535	see also 2738 line	-	-
2742	CDKN1B	NM_004064.2	711	cagcttgcccgaggtctactaca	219262	664292	kinase_related, cell_cycle	Smad3/Sp-1 heterodimer	colorectal cancer(大腸癌)、atherosclerosis(粥状 硬化症)、bladder cancer(膀胱癌)、breast cancer(乳癌)、ovarian cancer(原発性卵巣癌)、 prostate cancer(前立腺癌)、myocardial infarction(心筋梗塞)、Ewing's sarcoma(ユーン グ肉腫)、colorectal cancers(結腸直腸癌)、
2743	CNK	NM_004073.1	219	gccgcacagcgcgagaagatcc	77274	705150	kinase_related, cell_cycle	protein kinase CK2	-
2744	CNK	NM_004073.1	224	atcagcgcgagaagatcctaaat	77275	705151	see also 2743 line	-	-
2745	CNK	NM_004073.1	226	cagcgcgagaagatcctaaatga	77276	705152	see also 2743 line	-	-
2746	CRY1	NM_004075.2	1743	ttgatgcagattgagacataaat	24654	618356	gpcr, receptor_activity	-	-

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2747	CRY1	NM_004075.2	1851	cagatcccaatggagactatc	24655	618357	see also 2746 line			
2748	CRY1	NM_004075.2	1963	atgttgatagagatttaattc	24659	618363	see also 2746 line			
2749	CTSS	NM_004079.3	734	gacgttctctatccctcaaacg	187864	581601	-	cathepsin S	Alzheimer disease(アルツハイマー病)	
2750	COCH	NM_004086.1	583	ttgggcagcgcgcgatttaattc	313664	695832	-	translation	deafness(聾)	
2751	COCH	NM_004086.1	584	tgagcagcgcgcgatttaattac	313665	695833	see also 2750 line			
2752	COCH	NM_004086.1	1024	gtcgaataatggcttctctotc	313675	695843	see also 2750 line			
2753	COCH	NM_004086.1	1181	cagcaggttgagagtagcaatt	313680	695848	see also 2750 line	membrane-associated guanylate kinase	-	
2754	DLG1	NM_004087.1	190	tgccggttcggaagcaagatacc	120872	534487	kinase_related			
2755	DLG1	NM_004087.1	1571	aagggaaccttagaaaagtgttc	120906	534523	see also 2754 line			
2756	DLG1	NM_004087.1	2137	aagacagagcccgattaaaaca	120922	534536	see also 2754 line			
2757	DLG1	NM_004087.1	2303	ttctaagccagcgatagtgaag	120927	534540	see also 2754 line			
2758	DUSP3	NM_004090.2	440	gcgcctcccaacgctagtattc	195178	588346	phosphatase	protein tyrosine/serine/threonine	-	
2759	DUSP3	NM_004090.2	441	ccgcctcccaacgctagtattcg	195179	588347	see also 2758 line			
2760	ECHS1	NM_004092.2	150	ttgcctcgcggtgctaaacttga	233513	621998	-	short-chain enoyl-CoA hydratase	-	
2761	ECHS1	NM_004092.2	502	agcttgcgatgctggtgatc	233519	622005	see also 2760 line			
2762	EFNB2	NM_004093.2	134	tcctcgaaactccaaattctacc	319586	684384	-	transmembrane ephrin	breast cancer(乳癌)、neuroblastoma(神経芽細胞腫)、melanoma(メラノーマ)	
2763	EFNB2	NM_004093.2	167	ctggtactataccacagatagag	319588	684386	see also 2762 line			
2764	EFNB2	NM_004093.2	231	ctgttggccagatgaattatt	319590	684392	see also 2762 line			
2765	EMX2	NM_004098.2	1403	acggaaactcaggttaaaagtatg	3174	443410	transcription_regulator	transcription factor	-	
2766	EMX2	NM_004098.2	1541	caggcaggtccggaggagaaataga	3177	443414	see also 2765 line			
2767	EMX2	NM_004098.2	1543	ggcgggtccggaggagaaatagacg	3178	443415	see also 2765 line			
2768	STOM	NM_004099.4	508	ccgcctcttggcacaactact	322948	692211	-		stomatocytosis(有口赤血球症)	
2769	EYA4	NM_004100.2	781	atggagcgttgacacttttact	205065	595828	phosphatase, transcription_regulator		-	
2770	EYA4	NM_004100.2	794	cactttactgggtgaatgaatta	205066	595829	see also 2769 line			
2771	EYA4	NM_004100.2	1771	aggacttaagctactacagtttt	205090	595853	see also 2769 line			
2772	PTK2B	NM_004103.3	1026	gtggaggtatgaccttcaaatcc	98530	512887	kinase_related, apoptosis, signal_transduction		-	
2773	EFEMP1	NM_004105.2	542	gactggcgcgaataactttgtca	142802	547758	-		Doyne honeycomb retinal degeneration(網膜変性)、Alzheimer disease(アルツハイマー病)	
2774	EFEMP1	NM_004105.2	544	ctggcgcgaataactttgtcatc	142803	547759	see also 2773 line			
2775	EFEMP1	NM_004105.2	1455	gagttctactacgacaacaag	142830	547785	see also 2773 line			
2776	EFEMP1	NM_004105.2	1586	ctctgtttaagattgacaataa	142836	547788	see also 2773 line			
2777	FGF13	NM_004114.2	706	ccgcggagcgagaaatccaac	169052	565837	signal_transduction		-	
2778	FGF13	NM_004114.2	707	ccgcggagcgagaaatccaacg	169053	565838	see also 2777 line			

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2779	FGF13	NM_004114.2	767	cagctgcgcacaaacacaggttaa	169054	565840	see also 2777 line		
2780	FGF14	NM_004115.2	153	gcgcattcttgcgcctcagaagc	169067	565849	signal_transduction	-	
2781	FGF14	NM_004115.2	397	ctctacocatcagaactttttac	169075	565855	see also 2780 line		
2782	FKBP5	NM_004117.2	245	ggggagattataaagattgtcaaa	179867	619051		cyclophilin-type peptidyl-prolyl cis- trans isomerase	-
2783	FKBP5	NM_004117.2	246	ggagattataaagattgtcaaaa	179868	619052	see also 2782 line		
2784	FLT3	NM_004119.1	1345	atgttcacgctgaataataagaag	83688	502612	receptor_activity, signal_transduction	vascular endothelial growth factor receptor	-
2785	FLT3	NM_004119.1	1540	tgggtgtcggagcagctactctaaa	83692	502619	kinase related		-
2786	GUCY1B2	NM_004129.1	1742	atccatactggaccagctcttagc	234158	618551	see also 2784 line	receptor guanylate cyclase	-
2787	GYG	NM_004130.2	259	ctgtcatctaaaccttaataag	211699	600158		glycogenin glucosyltransferase	-
2788	GYG	NM_004130.2	512	ttctgagcaagtagtagtttgatg	211707	600171	see also 2787 line		
2789	GYG	NM_004130.2	638	ctctacatcccgccatttaaaag	211710	600180	see also 2787 line		
2790	GYG	NM_004130.2	639	tcctacatcccgccatttaaaagt	211711	600181	see also 2787 line		
2791	HSPA9B	NM_004134.4	983	gagagacaggaggttgattgact	85289	503973		ATP binding	-
2792	IDH3G	NM_004135.2	612	tgccaacgtcatccactgtgaaga	85635	504089			-
2793	MYO9B	NM_004145.2	551	tggccatcaaccccttaagtttc	93749	509969		myosin ATPase	-
2794	MYO9B	NM_004145.2	552	ggccataaccccttaagtttc	93750	509970	see also 2793 line		
2795	MYO9B	NM_004145.2	2215	taccggttgatgataacaaat	93769	509990	see also 2793 line		
2796	MYO9B	NM_004145.2	2216	accggttgatgataacaaatg	93770	509991	see also 2793 line		
2797	PRKAR2A	NM_004157.1	884	tggaccgggtgacttttagaaga	108055	518021	kinase_related, signal_transduction	cAMP-dependent protein kinase, regulator	-
2798	RAB1A	NM_004161.2	182	tcagcatgaatcccgaaataga	109949	465070	signal_transduction	protein transporter	-
2799	RAB1A	NM_004161.2	459	cagatcaggagctcttcaataat	109960	465075	see also 2798 line		
2800	RAB5A	NM_004162.3	497	gtgaaaggccaatttcattgaatt	110333	520132	signal_transduction	protein transporter	-
2801	SLC1A3	NM_004172.3	645	ctgtgtgattggcataatcatt	257661	641176		sodium:dicarboxylat e/tricarboxylate cotransporter	-
2802	SLC1A3	NM_004172.3	788	ctgtgagaagcctgctttaaaca	257663	641179	see also 2801 line		
2803	SNRPD3	NM_004175.3	443	gtctattgtgtgccgattaaag	47344	471383		pre-mRNA splicing factor	-
2804	STX3A	NM_004177.3	716	atcttoactctggagcatatga	270949	652739		protein transporter	-
2805	TPH1	NM_004179.1	923	tggcaacgtgctactttttcact	164528	562337		tryptophan 5- monooxygenase	-
2806	WNT2B	NM_004185.2	942	tggcaacccggactgacttctgt	255462	639606			-
2807	WNT2B	NM_004185.2	945	caccggactgacttcttctact	255463	639607	see also 2806 line		
2808	WNT2B	NM_004185.2	948	ccggactgacttcttctactttg	255464	639608	see also 2806 line		
2809	SMCX	NM_004187.1	538	ccggggtccgacgatttcttacc	40182	704655	transcription_regul or	molecular_function unknown	-

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2810	STK19	NM_004197.1	997	gagctgggagattcatcaagtac	101563	515559	kinase_related	-	-
2811	SVT7	NM_004200.2	139	ctgggcaaacgctacaagaattc	275152	657629	-	-	-
2812	SVT7	NM_004200.2	140	tgggcaaacgctacaagaattcc	275153	657630	see also 2811 line	-	-
2813	PIGQ	NM_004204.2	475	caggctcatctcatctctctatga	210278	599428	-	-	-
2814	PIGQ	NM_004204.2	1323	caggctgactcctcctgaagatcc	210283	599436	see also 2813 line	-	-
2815	USP2	NM_004205.3	1760	cagcaagctcacaacatttgga	189142	583151	-	-	-
2816	PDOD8	NM_004208.2	386	gtccttatttggagcttatcaac	224901	611337	apoptosis, signal_transduction	-	-
2817	PDOD8	NM_004208.2	387	tccttatttgggctttatcaaca	224902	611338	see also 2816 line	-	-
2818	PDOD8	NM_004208.2	936	atgaaaagctgtgattgcaaca	224920	611354	see also 2816 line	-	-
2819	PDOD8	NM_004208.2	1223	agcaactggagccatggaaaaagt	224928	611363	see also 2816 line	-	-
2820	SLC6A5	NM_004211.1	826	acgagcaaggggagtgagaataag	256039	619960	glycine:sodium symporter	-	-
2821	SLC6A5	NM_004211.1	1870	aacgcaagtgcaaatgtgagat	256062	619990	see also 2820 line	-	-
2822	EBAG9	NM_004215.3	827	ctgaattaggtagcttagatacc	248419	634783	apoptosis	-	-
2823	STK17B	NM_004226.2	394	ttgctgtgttagacaatgiata	101449	515512	kinase_related, apoptosis	protein serine/threonine kinase	-
2824	SOC54	NM_004232.2	1128	tgctactctcaatgcagataat	310249	540543	-	-	-
2825	SOC54	NM_004232.2	1723	taccagaatagacttaattcaga	310265	540572	see also 2824 line	-	-
2826	TRIP15	NM_004236.1	1027	atggatgactcttcataagaga	136908	690117	-	protein binding	-
2827	TRIP15	NM_004236.1	1106	agccttacacaagaatacatatt	136914	690122	see also 2826 line	-	-
2828	TRIP12	NM_004238.1	2785	aagccaagaccctgaagatagtag	230943	616046	-	ubiquitin-protein ligase	-
2829	TRIP12	NM_004238.1	2786	agccaagaccctgaagatagtagt	230944	616047	see also 2828 line	-	-
2830	TRIP12	NM_004238.1	2843	aagtacctgatatttttagtgt	230946	616051	see also 2828 line	-	-
2831	TRIP12	NM_004238.1	3080	agccctcaaggtcgattgaagtg	230952	616056	see also 2828 line	-	-
2832	TRIP12	NM_004238.1	3082	ccctcaaggtcgattgaagtgatg	230953	616057	see also 2828 line	-	-
2833	TRIP12	NM_004238.1	3088	aggctgattgaagtgatgtctaa	230954	616058	see also 2828 line	-	-
2834	TRIP12	NM_004238.1	3203	accactactcagtcacctaatac	230955	616065	see also 2828 line	-	-
2835	TRIP12	NM_004238.1	3517	tggagctgagtgcccttgtagaaa	230962	616073	see also 2828 line	-	-
2836	TRIP12	NM_004238.1	3519	gagctgagtgcccttgtagaaaac	230963	616074	see also 2828 line	-	-
2837	TRIP12	NM_004238.1	3534	tagaaatcctgtagcatagtctca	230964	616075	see also 2828 line	-	-
2838	TRIP12	NM_004238.1	3762	tagttcacagatgaacaactgc	230969	616083	see also 2828 line	-	-
2839	TRIP12	NM_004238.1	4276	ttagacaaaagactcacataat	230983	616094	see also 2828 line	-	-
2840	TRIP12	NM_004238.1	4277	tggcaaaagactcacataatg	230984	616095	see also 2828 line	-	-
2841	TRIP12	NM_004238.1	4474	tccacacaccctgaaaataataa	230991	616102	see also 2828 line	-	-
2842	TRIP12	NM_004238.1	4561	ctggattacttgtatgataatg	230997	616110	see also 2828 line	-	-
2843	TRIP12	NM_004238.1	4562	tggattacttgtatgataatgc	230998	616111	see also 2828 line	-	-
2844	TRIP12	NM_004238.1	4823	atcaaccagctgattctcaaga	231009	616132	see also 2828 line	-	-
2845	TRIP12	NM_004238.1	5061	gaggtagaagaagtaactcttagc	231019	616144	see also 2828 line	-	-
2846	TRIP12	NM_004238.1	5178	tcgcaaaaggttaagatgaagttt	231025	616147	see also 2828 line	-	-
2847	TRIP10	NM_004240.1	661	cagatgccccagatatttcgataa	136865	638243	signal_transduction	protein binding	-
2848	TRIP10	NM_004240.1	666	gccccagattatgataagctcc	136866	638244	see also 2847 line	-	-

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2849	TGM5	NM_004245.1	224	accgccaggcaggagatgtatgca	153650	736319	-	protein-glutamine gamma- glutamyltransferas	-
2850	GLP2R	NM_004246.1	173	tggtttccatcaagcaagttaca	242669	630784	gpcr, receptor_activity, signal_transduction	G-protein coupled receptor	-
2851	U5-116KD	NM_004247.1	393	tacaggttatgagatgattttot	47430	477737	-	translation elongation factor	-
2852	U5-116KD	NM_004247.1	1498	aagatgtacagcacagatgatgg	47454	477770	see also 2851 line	-	-
2853	U5-116KD	NM_004247.1	2407	ttgattcggaaatgtcaagtttaa	47477	477793	see also 2851 line	-	-
2854	U5-116KD	NM_004247.1	2537	gtctgatggagacattactacttt	47480	477798	see also 2851 line	-	-
2855	U5-116KD	NM_004247.1	2948	aacaggatgttgctcaattac	47486	477802	see also 2851 line	-	-
2856	RAB9A	NM_004251.3	610	gggacaacggcgactatccttat	110407	520164	signal_transduction	protein transporter	-
2857	PLAA	NM_004253.2	259	tgctaaagctcgtcgtgaatgaca	298469	539012	-	phospholipase A2 activator	-
2858	PLAA	NM_004253.2	658	ccgacttccagctcagctctatat	298483	539023	see also 2857 line	-	-
2859	PLAA	NM_004253.2	906	aaggacagactcgtctaatcaga	298494	539031	see also 2857 line	-	-
2860	PLAA	NM_004253.2	945	aagcctatcagctgagatgttagt	298495	539032	see also 2857 line	-	-
2861	PLAA	NM_004253.2	2109	cacttatcagtgatgattcaaat	298538	539081	see also 2857 line	-	-
2862	SEMA4F	NM_004263.2	528	ttgtggcaccttcgctttttgac	251299	637591	-	receptor	-
2863	SEMA4F	NM_004263.2	550	ccgaaagtcggagttattgatgt	251300	637593	see also 2862 line	-	-
2864	SEMA4F	NM_004263.2	580	ttccagcagatgtgaagagactga	251301	637594	see also 2862 line	-	-
2865	FADS2	NM_004265.2	1244	acgtggagcagctccttctcaac	226740	609869	-	-	-
2866	CRSP6	NM_004268.3	1458	gtcctcaagcttttgataaaat	248300	755134	receptor_activity, transcription_regulat or,	-	-
2867	CHST3	NM_004273.2	875	ctcgttcgtggcgaggtcttca	217387	605580	-	-	-
2868	EEF1E1	NM_004280.2	456	tcgctggtttgtcacattcagc	302335	477476	-	-	-
2869	BAG3	NM_004281.2	568	cagctcagaccaggtctacattcc	129134	532422	apoptosis	protein binding	-
2870	GTPBP1	NM_004286.3	255	agggatcggagagaccatattat	57562	477593	-	translation elongation factor	-
2871	GTPBP1	NM_004286.3	256	gggatcggagagaccatattatg	57563	477594	see also 2870 line	-	-
2872	GTPBP1	NM_004286.3	259	atcggagagaccatattatgca	57564	477595	see also 2870 line	-	-
2873	PSCDBP	NM_004288.2	503	tgctaacgatagagactcttaat	317024	681513	-	-	-
2874	RNF14	NM_004290.3	389	gtggagaacacagatctatttg	112369	525685	transcription_regulat or,	-	-
2875	GDA	NM_004293.1	199	gtgagcgacagcggcaaatagt	156998	594093	-	zinc binding	-
2876	GDA	NM_004293.1	808	agccatataagtgaataatcgtga	157023	594116	see also 2875 line	-	-
2877	RGS6	NM_004296.3	382	gtcgtcacaggactgacattgt	192384	586167	gpcr, signal_transduction	regulator of G- protein signaling	-
2878	RGS6	NM_004296.3	433	gagaccaggttgaagcaataca	192385	586170	see also 2877 line	-	-
2879	RGS6	NM_004296.3	824	tgccagcgtgtgtgaacacaaca	192392	586173	see also 2877 line	-	-
2880	GNA14	NM_004297.2	649	aagtggagaaaagcaccttctatca	109096	519425	gpcr, signal_transduction	signal transducer	-

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2881	GNA14	NM_004297.2	727	cacgaagctggtttaccacaaaca	109097	519428	see also 2880 line	receptor activity, kinase related, signal transduction	transmembrane receptor protein tyrosine kinase	inflammatory myofibroblastic tumors(炎症性筋肉線維芽細胞性腫瘍)、non-hodgkin lymphoma(非ホジキンリンパ腫)、anaplastic large cell lymphoma(未分化大細胞リンパ腫)、inflammatory myofibroblastic tumor(炎症性筋線維芽細胞腫瘍)、Hodgkin's disease(ホジキン病)
2882	ALK	NM_004304.3	3740	aacaatgaccccccgaatggtg	49740	493740	see also 2882 line	protein binding	-	-
2883	ALK	NM_004304.3	4974	ggcgtgtatcaggataatgact	49754	493759	see also 2882 line	signal transduction	-	-
2884	ARHGDJA	NM_004309.3	412	gtgtggagtagcaggataaaatc	129085	664958	see also 2884 line	signal transduction	-	-
2885	ARHGDJA	NM_004309.3	417	gagtagcaggataaaatctcttt	129086	664959	see also 2884 line	signal transduction	-	-
2886	ARRB2	NM_004313.3	276	ctgcaagctcaccgttactctgg	314063	678812	see also 2888 line	apoptosis, signal transduction	-	-
2887	ASPH	NM_004318.2	2273	atcttccggctgatattcatcg	138130	712787	see also 2888 line	receptor signaling protein	-	-
2888	ATP2A1	NM_004320.2	1288	gggagaggctctgaagaatgata	72697	585605	see also 2888 line	breast cancer(乳癌)	-	-
2889	ATP2A1	NM_004320.2	1671	ggctcatcgaccgctgtaactat	72701	585615	see also 2888 line	receptor signaling protein	-	-
2890	ATP2A1	NM_004320.2	1673	gtcatgacccgctgtaactatgt	72702	585616	see also 2888 line	receptor signaling protein	-	-
2891	ATP2A1	NM_004320.2	2961	ttgacccctgcgcgatgattctc	72706	585626	see also 2888 line	receptor signaling protein	-	-
2892	ATP2A1	NM_004320.2	2964	acccctgcgcgatgattctcaag	72707	585627	see also 2888 line	receptor signaling protein	-	-
2893	ATSV	NM_004321.3	2879	ctcttggatgaccgacatttg	73906	505198	see also 2888 line	receptor signaling protein	-	-
2894	BAG1	NM_004323.2	871	aagctctctgcaaaccttgatagg	129121	532399	see also 2888 line	receptor signaling protein	-	-
2895	BAG1	NM_004323.2	1063	ctggagcggctgcagctacaaac	129124	532408	see also 2888 line	receptor signaling protein	-	-
2896	BCSIL	NM_004328.3	307	ccctactttggggctggaatttgg	73985	718831	see also 2888 line	receptor activity, kinase related, signal transduction	-	tubulopathy, encephalopathy, and liver failure due to complex III deficiency(複合体III欠損症による腎症、肝障害、脳症)、gracile syndrome(大腿導筋症候群)
2897	BMPR1A	NM_004329.1	674	tagaatgttgcggaccaaattta	74106	496133	see also 2888 line	transforming growth factor-beta receptor	-	Alzheimer disease(アルツハイマー病)、polyposis(ポリープ症)
2898	BUB1	NM_004336.1	1794	gggggtattcgctgcaacaaaacc	74436	496573	see also 2888 line	protein serine/threonine kinase	-	colorectal cancer(大腸癌)
2899	BUB1	NM_004336.1	2886	acctgggtcagagtagatagatgt	74463	496607	see also 2888 line	kinase related, cell cycle	-	-
2900	BUB1	NM_004336.1	2890	gggtcagagtagatagatgaaac	74465	496608	see also 2888 line	kinase related, cell cycle	-	-
2901	C8orf1	NM_004337.1	1211	gagctgtctataacaaaaggaaag	278089	758650	see also 2888 line	molecular function	-	-
2902	C8orf1	NM_004337.1	1333	gtgttccagacagagtaactga	278093	758653	see also 2901 line	calcium ion binding	-	-
2903	CETN2	NM_004344.1	532	tcctgcgcgatgataaaagacc	140697	546329	see also 2901 line	calcium ion binding	-	-
2904	RUNX2	NM_004348.1	498	aaggttcaacgactctgagcttgg	10851	466626	see also 2904 line	transcription factor	-	-
2905	RUNX2	NM_004348.1	499	agggttcaacgactctgagattgt	10852	466627	see also 2904 line	transcription factor	-	-
2906	RUNX2	NM_004348.1	798	aggacagagtcagattacagacc	10857	466632	see also 2904 line	transcription factor	-	-
2907	RUNX2	NM_004348.1	1278	cagcaactcctatctctactatg	10863	466638	see also 2904 line	transcription factor	-	-
2908	RUNX2	NM_004348.1	1393	ggcagcagcgttataatccaaa	10864	466644	see also 2904 line	transcription factor	-	-
2909	RUNX2	NM_004348.1	1398	cacgctattataatccaaatttgc	10865	466646	see also 2904 line	transcription factor	-	-

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2910	CBFA2T1	NM_004349.2	1120	agcaagcgaccatgcactattag	1976	442547	transcription_regulat	-	leukemia(白血病)
2911	CBFA2T1	NM_004349.2	1147	ggccagcgctacagtcacaataa	1977	442548	see also 2910 line		
2912	CBFA2T1	NM_004349.2	1148	gccagcggtacagtcacaataac	1978	442549	see also 2910 line		
2913	CCNG2	NM_004354.1	259	gaggctaccgccggagaatgataa	306751	673724	cell cycle	cyclin-dependent protein kinase、 regulator	-
2914	CCNG2	NM_004354.1	260	aggctaccgccggagaatgataac	306752	673725	see also 2913 line		
2915	CCNG2	NM_004354.1	261	ggctaccgccggagaatgataaca	306753	673726	see also 2913 line		
2916	CCNG2	NM_004354.1	265	accgccggagaatgataacacttt	306754	673727	see also 2913 line		
2917	CCNG2	NM_004354.1	266	cccgaggagaatgataacactttg	306755	673728	see also 2913 line		
2918	CCNG2	NM_004354.1	267	cccgaggagaatgataacactttgt	306756	673729	see also 2913 line		
2919	CD151	NM_004357.3	704	ggagccatgcctccaacatctac	318647	691950	-	-	-
2920	CDH7	NM_004361.2	1089	ggctaaagaccagctattgtcttg	140276	545872	-	-	-
2921	GDH7	NM_004361.2	1123	aaggatattgttgctcaaaatgg	140277	545874	see also 2920 line		
2922	GDH7	NM_004361.2	1959	atccaattggaccaccagttttact	140298	545905	see also 2920 line		
2923	CDH7	NM_004361.2	2679	cagctcaaacctctgctcagaact	140312	545923	see also 2920 line		
2924	CDH7	NM_004361.2	2762	gccaaagagagttgtactcctag	140316	545928	see also 2920 line		
2925	CLGN	NM_004362.1	262	ctcaacctatagggaaggtatat	137485	542601	-	chaperone	-
2926	CLGN	NM_004362.1	554	tggagggtgcatacattaaactcc	137497	542604	see also 2925 line		
2927	CLCN2	NM_004366.2	2437	ctgggagtggaaccatgcttatgt	263258	646907	channel	voltage-gated chloride channel	epilepsy(てんかん)、myoclonic epilepsy(ミオク ローヌスてんかん)
2928	CLCN2	NM_004366.2	2439	gggagtggaaccatgcttatgtca	263259	646908	see also 2927 line		
2929	COL12A1	NM_004370.4	301	cggatgggcctactaaagaattt	287699	695871	-	-	-
2930	COL12A1	NM_004370.4	6370	aacctgacactcccatataaaatt	287853	696040	see also 2929 line		
2931	COL12A1	NM_004370.4	6371	acctgacactccatataaaatta	287854	696041	see also 2929 line		
2932	COL12A1	NM_004370.4	6373	ctgacactccatataaaattact	287855	696042	see also 2929 line		
2933	COPA	NM_004371.2	2752	tgtaccactggcttagatgaag	169779	700267	-	protein transporter	-
2934	COPA	NM_004371.2	3951	tgcacaaccctttgacactttgt	169800	700289	see also 2933 line		
2935	CRABP1	NM_004378.1	104	ggcgacagcaggagaatttcgacg	173398	570068	signal_transduction	transporter	-
2936	CREB1	NM_004379.2	785	cagccgggtactaccattctaca	2399	442805	or、	-	Parkinson disease(パーキンソン病)
2937	CREB1	NM_004379.2	842	gtgcccgacaaccaagtgttgt	2401	442807	see also 2936 line		
2938	CREB1	NM_004379.2	994	ggagagggtccgtcttaataaga	2406	442810	see also 2936 line		
2939	CREBL1	NM_004381.3	984	cccgctgaagtggtatgcacaagc	24607	457405	transcription_regulat	translation regulator	-
2940	CRHR1	NM_004382.2	795	tgttgacagccgcctacaactaac	242048	630460	gpcr、 receptor_activity	corticotrophin- releasing factor receptor	alcoholism(アルコール依存症)
2941	CSK	NM_004383.1	431	gcctggccatccgggtacagaatg	77617	498857	kinase_related、 cell cycle	protein tyrosine kinase	colorectal cancer(大腸癌)、breast cancer(乳 癌)、colorectal cancers(結腸直腸癌)
2942	CSK	NM_004383.1	434	tggccatccggtacagaatgat	77618	498860	see also 2941 line		
2943	CSK	NM_004383.1	789	tgaacactaccgcgatctctac	77623	498860	see also 2941 line		

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2944	CSNK1G3	NM_004384.1	184	ggcaatttttgagaattacatt	77705	793629	kinase_related, signal_transduction	protein serine/threonine kinase	-
2945	CSNK1G3	NM_004384.1	998	atgactgattgtaaacagttg	77730	489995	see also 2944 line	-	-
2946	CSNK1G3	NM_004384.1	1049	atcctgctctgctacaaacaga	77731	489997	see also 2944 line	-	-
2947	CSNK1G3	NM_004384.1	1208	tacagggtgaagttctacaagt	77735	489000	see also 2944 line	-	-
2948	CSPG2	NM_004385.2	1235	aaccctgctgcttttgagagcc	140996	546665	-	lectin	Alzheimer disease(アルツハイマー病)
2949	CSPG2	NM_004385.2	4300	atccaatagatcagaattctaaa	141092	546669	see also 2948 line	-	-
2950	CSPG2	NM_004385.2	9624	agcgagagaccagtggaacttga	141241	546816	see also 2948 line	-	-
2951	CTNNA2	NM_004389.1	2518	gggggcaggcctagctcaacttc	287025	660477	-	structural constituent of cytoskeleton	-
2952	CYP8B1	NM_004391.1	465	tggctttccggaagaatatgttt	221144	609201	-	steroid hormone receptor	-
2953	DACH	NM_004392.2	1234	gacttcgagaccctctacaatga	310561	676504	transcription_regulat or	-	-
2954	DNC1I	NM_004411.1	528	caggcagatctggggccattaca	299916	534644	-	motor	-
2955	DNC1I	NM_004411.1	530	ggcgctctggggccattacaag	299917	534645	see also 2954 line	-	-
2956	DNMT2	NM_004412.3	1058	tacttaaatgcgatttttcaact	25427	458564	-	-	-
2957	DUSP1	NM_004417.2	858	atcaacgctctcagccaattgtcc	195078	588306	phosphatase, kinase_related, cell_cycle	USF43/USF44 complex	lipoid proteinosis of Urbach and Wiethe(脂肪タン パク症)
2958	ECM1	NM_004425.2	613	ggggcctctccagacaactctga	260490	644044	kinase_related	-	-
2959	PHC2	NM_004427.2	418	ccccccagaatggtagaataaa	134635	538642	-	-	-
2960	PHC2	NM_004427.2	463	cccaaatctcagcagctgttattc	134637	538643	see also 2959 line	-	-
2961	PHC2	NM_004427.2	468	atcctgcagcagctgttatogaagg	134638	538644	see also 2959 line	-	-
2962	EFNA1	NM_004428.2	471	aggacacagctactactactatct	171737	694574	-	-	-
2963	EGR3	NM_004430.2	865	cgctattccccccaggattacc	2967	459042	transcription_regulat or	transcription factor mRNA binding, 3'	-
2964	ELAVL2	NM_004432.1	780	gagtcctgtaagcttgaagaga	47566	473710	or	UTR	-
2965	ELAVL2	NM_004432.1	1076	atcaaggagggttagaggtttattc	47578	473723	see also 2964 line	-	-
2966	ELAVL2	NM_004432.1	1080	agggtgtagggtttattcagatt	47579	473724	see also 2964 line	-	-
2967	ELAVL2	NM_004432.1	1081	gggggttaggggtttattcagatt	47580	473725	see also 2964 line	-	-
2968	ELAVL2	NM_004432.1	1087	taggggtttattcaggtttgacaag	47581	473727	see also 2964 line	-	-
2969	ELAVL2	NM_004432.1	1451	gagtatctcgtggcacaagtgttg	47586	473742	see also 2964 line	-	-
2970	EPHA4	NM_004438.2	1358	cagcaccatcatcattgctttg	81468	501708	-	ephrin receptor	-
2971	EPHA4	NM_004438.2	2919	cacgcaccagaataaagatttga	81492	501743	see also 2970 line	-	-
2972	EPHA5	NM_004439.3	1700	ttaagtcgaagatttgatttga	81532	501772	receptor_activity, kinase_related, signal_transduction	-	-
2973	EPHA5	NM_004439.3	1884	ttgccatccaaagcctaatatgg	81534	501775	see also 2972 line	-	-



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2974	EPHA7	NM_004440.2	295	caggctcgaaggaagtactact	81557	501894	receptor_activity, signal_transduction, kinase_related	ephrin receptor	-
2975	EPHA7	NM_004440.2	464	ggctgcggactaactggattcc	81563	501901	see also 2974 line		
2976	EPHA7	NM_004440.2	772	caggatagaggccttgcatagc	81572	501912	see also 2974 line		
2977	EPHA7	NM_004440.2	1709	cagctccattataatctgaaa	81601	501941	see also 2974 line		
2978	EPHA7	NM_004440.2	1710	agctccattataatctgaaac	81602	501942	see also 2974 line		
2979	EPHA7	NM_004440.2	2050	acctatgaggaccaccaatagac	81613	501951	see also 2974 line		
2980	EPHB1	NM_004441.2	2937	cagacttcacggcctttaccacc	81689	502033	receptor_activity, signal_transduction, kinase_related	ephrin receptor	-
2981	EPS8	NM_004447.3	545	aagtgtagcactcaagatatgatt	248437	696421	signal_transduction	SH3/SH2 adaptor protein	-
2982	EPS8	NM_004447.3	549	gtgactcaagatatgattcttc	248438	696423	see also 2981 line		
2983	EPS8	NM_004447.3	758	aggtaagcaaacctaattagt	248444	696426	see also 2981 line		
2984	ERG	NM_004449.2	661	aactctccacgggtaatacatgc	3401	443484	transcription_regulation, signal_transduction		leukemia(白血病), Ewing sarcoma(ユ-イング肉腫), Ewing's sarcoma(ユ-イング肉腫), Ewing's tumours(ユ-イング腫瘍)
2985	ETFDH	NM_004453.1	1403	taggactcctatgtaactgaatat	225783	614140	-	electron-transferring flavoprotein	glutaricaciduria(グルタル酸尿症)
2986	ETFDH	NM_004453.1	1404	aggactcatgtaactgaatatg	225784	614141	see also 2985 line		
2987	ETFDH	NM_004453.1	1418	ctgaatatgagcaaatatgaag	225785	614143	see also 2985 line		
2988	ETFDH	NM_004453.1	1692	gagtgtaataatcatgaacatg	225797	614156	see also 2985 line		
2989	ETFDH	NM_004453.1	1695	tggtaataatcatgaacatgacc	225798	614157	see also 2985 line		
2990	EZH2	NM_004456.3	205	ttgttggcggagcgtgtgaaat	26359	459433	-		
2991	EZH2	NM_004456.3	292	tagttccatcgtcagaaaattt	26361	459437	see also 2990 line		
2992	EZH2	NM_004456.3	543	ctgtttacataacattccttat	26368	459451	see also 2990 line		
2993	EZH2	NM_004456.3	847	ttctcaatgtttccagataagg	26377	459458	see also 2990 line		
2994	EZH2	NM_004456.3	1416	ctcgtgtcaaacaccaataaag	26387	459469	see also 2990 line		
2995	EZH2	NM_004456.3	1564	aacatgtagacacaggtgatgagt	26391	459477	see also 2990 line		
2996	EZH2	NM_004456.3	1567	atgtacacaggtgatgagttta	26392	459478	see also 2990 line		
2997	EZH2	NM_004456.3	1713	acgctcctcaaccattgttac	26395	459479	see also 2990 line		
2998	EZH2	NM_004456.3	1951	cgtgaccattgggacagcagtaaaa	26396	459488	see also 2990 line		
2999	EZH2	NM_004456.3	1953	ctgaccattgggacagcagtaaaa	26397	459489	see also 2990 line		
3000	EZH2	NM_004456.3	2268	atgcaaaagttagtggttaac	26408	459505	see also 2990 line		
3001	FACL4	NM_004458.1	543	aagttattcttgggaattataa	165617	563167	-	mental retardation(精神遅滞)	
3002	FACL4	NM_004458.1	1056	gtgatgatcatcatagcaattt	165638	563181	see also 3001 line		
3003	FACL4	NM_004458.1	1121	gggaccgaagacacatatattg	165641	563185	see also 3001 line		
3004	FACL4	NM_004458.1	1168	tgaactgacacagagagatatct	165642	563187	see also 3001 line		
3005	FACL4	NM_004458.1	1535	tcctcagacacacggattcatga	165654	563202	see also 3001 line		
3006	FACL4	NM_004458.1	1537	ctcagacacacggattcatgaat	165655	563203	see also 3001 line		
3007	FACL4	NM_004458.1	1539	cagacacacggattcatgaatgt	165656	563204	see also 3001 line		

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3008	FACL4	NM_004458.1	1541	gacacacgattcaatgaatgct	165657	563205	see also 3001 line					
3009	FACL4	NM_004458.1	1890	cagattatagatcgtaagaaga	165671	563218	see also 3001 line					
3010	FAP	NM_004460.2	671	tgtcgcctgttgaggagtaatt	183459	577276	-	proyl			melanoma(メラノーマ)	
3011	FAP	NM_004460.2	673	gtcgcctgttgaggagtaattag	183460	577277	see also 3010 line					
3012	FDF1	NM_004462.2	217	ttgtacaagatctcaatcaga	165763	563240	-	oxidoreductase				
											mental retardation(精神遅滞), faciogenital dysplasia(顔面性器形成不全), Aarskog-Scott syndrome(Aarskog-Scott症候群)	
3013	FGD1	NM_004463.2	1052	gggaacacggatcctcgttaaaa	156797	557695	signal transduction					
3014	FGD1	NM_004463.2	1058	ccgcatcctgttaaaattgt	156798	557698	see also 3013 line					
3015	FGD1	NM_004463.2	1984	ttgtcacagcatctctctaac	156803	557705	see also 3013 line					
3016	FGD1	NM_004463.2	1987	tccacggcatctctctaacatc	156804	557706	see also 3013 line					
3017	FGD1	NM_004463.2	2634	agcgtcggcgacacgattgagt	156815	557725	see also 3013 line					
3018	FGD1	NM_004463.2	2637	gtggcgacacgattgattaga	156816	557726	see also 3013 line					
3019	FGD1	NM_004463.2	2639	gcggcgacgattgattagatg	156817	557727	see also 3013 line					
3020	FGD1	NM_004463.2	2640	cggcgacgattgattagatgg	156818	557728	see also 3013 line					
3021	FGF5	NM_004464.2	457	taccggatggcaaatgaatgg	169144	565956	cell cycle,					
3022	FGF5	NM_004464.2	529	caggagattgaggaatacaggg	169150	565960	signal transduction					
3023	FGF5	NM_004464.2	539	taggaatacaggagtttt-agc	169151	565961	see also 3021 line					
							signal transduction, cell cycle, transcription_regulat					
3024	FGF10	NM_004465.1	193	aggcatgtcggagagctacaatca	169028	565814	or					
3025	FLOT2	NM_004475.1	159	gacggcgaggaggtagctttaa	319055	683493	-					
3026	FLOT2	NM_004475.1	160	acggcgaggaggtagctttaa	319056	683494	see also 3025 line					
3027	FLOT2	NM_004475.1	161	cggcgaggaggtagctttaa	319057	683495	see also 3025 line					
3028	FOLH1	NM_004476.1	798	tgccaggaactgaagactcttta	183738	577603	serine-type endopeptidase					
3029	FRG1	NM_004477.1	925	tggacaggagagccaaattgaaa	314795	704395	-					
3030	FUT8	NM_004480.3	1129	ctcagaattggcgctatgctact	210747	599637	-					
3031	FUT8	NM_004480.3	1455	ggctcaaacatccagttattgg	210755	599644	see also 3030 line					
3032	FUT8	NM_004480.3	1666	atgaattttattgataactct	210761	599650	see also 3030 line					
3033	GALNT2	NM_004481.2	51	gggcactgcctactacatgact	210966	606538	-					
3034	GALNT2	NM_004481.2	963	ggggaagtaacacatgattgagg	210982	606551	see also 3033 line					
3035	GALNT3	NM_004482.2	664	ttgttgatgctgctagttaga	211022	606578	-				diabetes(糖尿病)	
3036	GALNT3	NM_004482.2	1044	aagagaagaagaaacacacac	211036	606586	see also 3035 line					
3037	GALNT3	NM_004482.2	1486	gtgtatgtgcagacacctaacc	211044	606603	see also 3035 line					
3038	GALNT3	NM_004482.2	1494	gccagacctaactcctgttatat	211045	606604	see also 3035 line					
3039	GALNT3	NM_004482.2	1496	cagacctaactcctgttatat	211046	606605	see also 3035 line					
											neuroblastoma(神経芽細胞腫), Simpson-Golabi- Behmel overgrowth syndrome(Simpson-Golabi- Behmel過成長症候群), Wilms tumor(ウィルムス腫瘍), Simpson-Golabi-Behmel Syndrome(Simpson-Golabi-Behmel症候群)	
3040	GPC3	NM_004484.2	790	agcaagacgtgaacctgaagat	310629	684905	receptor_activity					

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3041	GPC3	NM_004484.2	1107	ttgtgaatggcatgtacagaatc	310638	684917	see also 3040 line		
3042	GPC3	NM_004484.2	1759	tgcagaactggccctatgtctgg	310662	684937	see also 3040 line		
3043	GTF2A2	NM_004492.1	245	aagtttacttcagtttgataag	4530	816107		RNA polymerase II transcription factor	-
3044	HDGF	NM_004494.1	432	atcaacagcacaacaataccaag	169233	566033	signal transduction	heparin binding	-
3045	HDGF	NM_004494.1	671	cagagggtgacggtagtaagaag	169234	566035	see also 3044 line		
3046	FOXA3	NM_004497.2	1190	tgggagagcctggagctactacc	4018	443909	transcription_regulat	translation regulator	-
3047	ONECUT1	NM_004498.1	1316	gcgtcgaaactctacatgcaatat	8765	447510	or transcription_regulat	translation regulator	-
3048	ONECUT1	NM_004498.1	1318	gtcgaaactctacatgcaatatc	8766	447511	see also 3047 line		
3049	ONECUT1	NM_004498.1	1319	tcgaaactctacatgcaatatcca	8767	447512	see also 3047 line		
3050	HNRPA3	NM_004499.2	415	aggaggaacgcgggaaatatttc	52014	460295	-	-	-
3051	HNRPA3	NM_004499.2	629	ccgtgtaattgaccctaaagaag	52022	460301	see also 3050 line		
3052	HNRPA3	NM_004499.2	1004	tggaggtcagggtagtaacaaact	52030	460306	see also 3050 line		
3053	HNRPA3	NM_004501.2	1691	aactacctgggttaactaaacatg	28614	460353	-	-	-
3054	HOXC6	NM_004503.2	174	tcccaaacgtgcgcctoaattcc	5181	444817	transcription_regulat	-	-
3055	HOXC6	NM_004503.2	257	atctactgactccctttttatc	5183	444819	see also 3054 line		
3056	HOXC6	NM_004503.2	317	ccgtatgactatggatcattatc	5184	444821	see also 3054 line		
3057	HOXC6	NM_004503.2	404	acctaactcgcctcagatttttag	5186	444824	see also 3054 line		
3058	HRB	NM_004504.3	418	aggatcaccaaaaagtgaaga	28674	460451	-	RNA binding	-
3059	HRB	NM_004504.3	743	cagctacagccaaatttgctaac	28678	460455	see also 3058 line		
3060	HRB	NM_004504.3	744	agctacagccaaatttgctaac	28679	460456	see also 3058 line		
3061	HRB	NM_004504.3	840	gtctagtggttcgagtaatttg	28681	460460	see also 3058 line		
3062	HRB	NM_004504.3	1080	agcaactgctaatttagacaata	28689	460469	see also 3058 line		
3063	HSF2	NM_004506.2	617	aagattgtccagttttattgtac	5351	444916	transcription_regulat	translation regulator	-
3064	HSF2	NM_004506.2	673	acgtaaaaggccctctactcttaa	5353	444920	see also 3063 line		
3065	ILK	NM_004517.1	625	cagaatctcaaccgtattctcata	85718	504293	kinase_related、 signal_transduction	protein serine/threonine kinase	-
3066	KCNQ3	NM_004519.2	1505	tggatcggttcgcttttctaata	261064	644518	channel	voltage-gated potassium channel	benign familial neonatal convulsions(-), epilepsy(てんかん)
3067	KCNQ3	NM_004519.2	1526	atcctctgtgtagcaataactaaa	261066	644519	see also 3066 line		
3068	KCNQ3	NM_004519.2	1527	tctctgtgtgtgcaataactaaag	261067	644520	see also 3066 line		
3069	KCNQ3	NM_004519.2	1552	aagctattaccctctgaatgt	261071	644521	see also 3066 line		
3070	KCNQ3	NM_004519.2	2074	agcatgatggggaagtgtgtaa	261087	644532	see also 3066 line		
3071	KCNQ3	NM_004519.2	2258	cogatttgaataaccatcatctgc	261090	644536	see also 3066 line		
3072	KIF2	NM_004520.1	456	gagattgcaacagcaagaactta	87252	505699	-	motor	-
3073	KIF2	NM_004520.1	1699	cagagatgatgataaaacttct	87279	505744	see also 3072 line		
3074	KIF2	NM_004520.1	1701	gagagatgatgataaaacttctt	87280	505745	see also 3072 line		
3075	KIF5B	NM_004521.1	596	atggaggtgtaaaccttcgatcc	87732	505938	-	microtubule motor	-
3076	KIF5B	NM_004521.1	615	atccagaaggcatgggaattatt	87733	505939	see also 3075 line		

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3077	KIF5B	NM_004521.1	621	aaggcatgggaattattccaaga	87735	505940	see also 3075 line		
3078	KIF5B	NM_004521.1	1823	cagaagcttcaggaagttgaaga	87771	505968	see also 3075 line		
3079	KIF5B	NM_004521.1	2074	caactgttcaagactctacatta	87777	505977	see also 3075 line		
3080	KIF5B	NM_004521.1	2079	ttgcaagactctacattagcaaa	87779	505978	see also 3075 line		
3081	KIF5C	NM_004522.1	1097	tgcgagggagcgtgttctgacg	87810	506004	microtubule motor		
3082	MLLT3	NM_004529.1	485	aagtcgccttggattgacttta	300617	669106	transcription_regulator	leukemia(白血病)	
3083	MLLT3	NM_004529.1	487	gtccgcttggattgacttatt	300618	669107	see also 3082 line		
3084	MLLT3	NM_004529.1	859	tccaggatcacacaactcttc	300628	669119	see also 3082 line		
3085	MLLT3	NM_004529.1	1763	tgcagcagatcgtgacattata	300654	669131	see also 3082 line		
3086	MMP2	NM_004530.1	606	atgtgccaaactacaactcttc	148556	550280		Transcription factor AP-2 alpha	hepatocellular carcinoma(肝癌), oral cavity cancers(口腔癌), chondrosarcoma(軟骨肉腫), colorectal cancer(大腸癌), breast cancer(乳癌), Parkinson disease(パーキンソン病), CNS Tumours(中枢神経腫瘍), melanoma(メラノーマ), colorectal cancers(結腸直腸癌), osteosarcoma(骨髄性骨肉腫)
3087	MOCS2	NM_004531.3	638	tagggactacaagaataacttt	236842	671631			molybdenum cofactor deficiency(モリブデンコファクター欠損症)
3088	MOCS2	NM_004531.3	892	gccaaagtgcccatatggaaaa	236854	671641	see also 3087 line		
3089	MYT1	NM_004535.1	2113	cactttgactacgcaagtttcg	7367	446357	transcription_regulator	zinc binding	
3090	NAP1L1	NM_004537.3	151	gtctgaactgatcaagatttgg	33401	462273			
3091	NAP1L1	NM_004537.3	742	tggccagcttatgattgtgtct	33413	462285	see also 3090 line		
3092	NAP1L1	NM_004537.3	893	gggtgccagatagattggaaaa	33415	462290	see also 3090 line		
3093	NAP1L1	NM_004537.3	973	gacagttctgactgtgactaaaa	33416	462293	see also 3090 line		
3094	NAP1L3	NM_004538.2	1552	cagccaaagagtggtctctaatgc	33489	462376		DNA binding	
3095	NARS	NM_004539.2	482	ctgcgcaggaaggaagaattt	64738	485221		nucleic acid binding	
3096	NARS	NM_004539.2	921	cactctcaagcttgactatttt	64750	485233	see also 3095 line		
3097	NCAM2	NM_004540.2	316	gtgcaatttcacttagcaaatg	317891	683610			
3098	NCAM2	NM_004540.2	554	cacaagaagctacagtagtttg	317900	683614	see also 3097 line		
3099	NCAM2	NM_004540.2	1976	gacaaggagactacagtaaaata	317952	683657	see also 3097 line		
3100	NFATC4	NM_004554.3	704	ggggacggctctccttagagatta	7667	446605	transcription_regulator	translation regulator	
3101	NOTCH4	NM_004557.2	756	aaggcacctctcgccataacacc	149267	550636	receptor activity, signal transduction	translation regulator	breast cancer(乳癌), schizophrenia(精神分裂病)
3102	NOTCH4	NM_004557.2	3926	cacaacggcactctgagaagg	149280	550649	transcription_regulator		
3103	PET112L	NM_004564.1	386	ctctgaactgccacataaacaag	57936	617352	see also 3101 line	translation factor, nucleic acid binding	
3104	PET112L	NM_004564.1	784	ttgagagtggatgccaatatctc	57948	617359	see also 3103 line		
3105	PEX14	NM_004565.1	311	aggctccagatggcgagattaag	323885	688621			

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3106	PFKFB4	NM_004567.2	515	tgccaacatcgtgcaagtgaac	96640	621814	kinase_related, phosphatase	fructose-2, 6- biphosphate 2- phosphatase	-
3107	PIK3C2G	NM_004570.2	2815	tgccattgaagattactttcattc	207123	597158	kinase_related	phosphatidylinosito l 3-kinase, class	-
3108	PIK3C2G	NM_004570.2	2816	gcccattgaagattactttcattc	207124	597159	see also 3107 line		
3109	PIK3C2G	NM_004570.2	4191	gcgccagtgccacatgtgaatt	207162	597192	see also 3107 line		
3110	PKNOX1	NM_004571.3	209	aagtagacagcatcatcaagtg	9365	441316	transcription_regulat or	-	-
3111	PNUTL2	NM_004574.2	929	ccggccattgattgttgattca	109850	520443	cell cycle,	-	melanoma(メラノーマ)
3112	PNUTL2	NM_004574.2	1389	aaggaacgaatgcacacaaact	109856	520450	see also 3111 line		
3113	PNUTL2	NM_004574.2	1393	aacgaatgcacacaaactgaat	109857	520451	see also 3111 line		
3114	PPP2R2B	NM_004576.2	707	ttcatctgtaggggtgaatacaat	298688	666252	phosphatase,	-	-
3115	PPP2R2B	NM_004576.2	711	tcgtagggtgaatacaatgttt	298689	666253	signal_transduction	-	-
3116	PPP2R2B	NM_004576.2	1394	gccacagtgaggaggtatcatg	298708	666266	see also 3114 line		
3117	RAB4A	NM_004578.2	494	accagccgagaaacctcaatgc	110310	520120	signal_transduction	protein transporter	-
3118	RAB4A	NM_004578.2	505	aactacaatgcgttactaatt	110311	520121	see also 3117 line		
3119	RAB27A	NM_004580.3	472	caggcagagagaggtttctagc	110077	519992	signal_transduction	-	-
3120	RP6KA3	NM_004586.1	18	ggcagacccgtggcagagatgg	99764	514239	kinase_related,	protein tyrosine kinase	Coffin-Lowry syndrome(-), diabetes mellitus(糖尿 病), mental retardation(精神遅滞)、 diabetes(糖尿病)
3121	RP6KA3	NM_004586.1	342	gacaaaatggagcagatgatct	99766	514243	see also 3120 line		
3122	RP6KA3	NM_004586.1	886	cagagctttttacgaatgctttt	99780	514256	see also 3120 line		
3123	RP6KA3	NM_004586.1	1139	agcttttcgggggttagttttt	99786	514263	see also 3120 line		
3124	RP6KA3	NM_004586.1	1491	aggaggtgaattgctggataaaa	99796	514277	see also 3120 line		
3125	RP6KA3	NM_004586.1	1665	atctattcgaattgttgatttg	99802	514287	see also 3120 line		
3126	RP6KA3	NM_004586.1	1966	gtgtcaaaagatgcttcaatgaga	99813	514301	see also 3120 line		
3127	SSA2	NM_004600.3	1158	aaggctgctatcacatccattica	54951	475665	transcription_regulat or	RNA binding	Siogren syndrome(シェーグレン症候群)
3128	SSA2	NM_004600.3	1160	ggctcgtatcacatccatttcata	54952	475666	see also 3127 line		
3129	SSA2	NM_004600.3	1762	tggtatgtgcccgtttgatact	54963	475683	see also 3127 line		
3130	STAU	NM_004602.1	1646	gcccacagccgagaccatttttaa	48776	472183	-	-	-
3131	STAU	NM_004602.1	1647	cccacagccgagaccatttttaa	48777	472184	see also 3130 line		
3132	STAU	NM_004602.1	1649	cacagccgagaccatttttaaga	48778	472185	see also 3130 line		
3133	TGFBR1	NM_004612.1	256	gaccacagacaaaagtatacaca	102515	516315	receptor_activity, kinase_related,	type I transforming growth factor-beta	
3134	TGFBR1	NM_004612.1	904	ctgtgtgtgtcagattatcatg	102541	516339	signal_transduction	receptor	pancreatic cancer(膵臓癌)
3135	TOP3A	NM_004618.2	1473	ctccattcaccaccacacaaatac	42796	469782	see also 3133 line	USF43/USF44 complex	Smith-Magenis syndrome chromosome region(Smith-Magenis症候群染色体部位)
3136	TRAF6	NM_004620.2	1446	ctcagcgtgtgcaactatata	67026	486995	signal_transduction kinase_related	-	-
3137	TRAF6	NM_004620.2	1448	cagcgtgtgcaactatatac	67027	486996	see also 3136 line		

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3138	TRAF6	NM_004620.2	1527	agggtacaatacgccttacaatt	67029	487001	see also 3136 line		
3139	TRAF6	NM_004620.2	1528	gggtacaatacgccttacaattc	67030	487002	see also 3136 line		
3140	TRAF6	NM_004620.2	1531	tacaatacgccttacaattcttg	67031	487003	see also 3136 line	non-selective cation channel	-
3141	TRPC6	NM_004621.3	1908	tgagatgcattatatactctgg	261863	645090	channel		-
3142	TRPC6	NM_004621.3	1925	tcctgggttaataaggcatgatg	261864	645092	see also 3141 line		
3143	WNT11	NM_004626.2	182	gcgtgtgctatggcatcaagtg	255418	639571	signal transduction	signal transducer	-
3144	FANCG	NM_004629.1	1258	caccgtaagatgggaatccaca	16272	678757	cell cycle		aplastic anemia(再生不良性貧血)、Fanconi anemia(ファンconi貧血)
3145	SF1	NM_004630.1	1950	tgccatggcagcaaaatacgaag	54694	470599	transcription_regulat or		-
3146	LRP8	NM_004631.2	1880	ccccctgcgaggttcattgtatt	147953	537284	receptor activity、 signal transduction		-
3147	DAP3	NM_004632.2	617	tacaacaaacagcgtttgatga	285443	658280	apoptosis		-
3148	BRPF1	NM_004634.1	3304	atgccgaggtatccatcatacc	23107	456735	transcription_regulat or	translation regulator	-
3149	MAPKAPK 3	NM_004635.3	1126	ggccactatcggttagactaag	90128	493610	kinase related、 signal transduction		-
3150	BAT2	NM_004638.2	503	tgggttcaagcgggttaagctcc	332653	709975	-		diabetes(糖尿病)
3151	BAT2	NM_004638.2	762	ccggactctcaaaacttcattatg	332655	709977	see also 3150 line		
3152	BAT2	NM_004638.2	1086	ggcccatgaagaggttgactaca	332664	709986	see also 3150 line		
3153	BAT3	NM_004639.2	3580	ggcagcagctccggtctctgatata	304896	532556	-		-
3154	BAT1	NM_004640.3	1014	gtgtactcttgagcaaaagagatc	49793	481475	-		-
3155	MLLT10	NM_004641.1	215	aggcagaggtctcccatagtatg	6956	461797	transcription_regulat or	transcription factor	leukemia(白血病)
3156	MLLT10	NM_004641.1	218	acgaggtctcccatagtatgaag	6957	461798	see also 3155 line		
3157	MLLT10	NM_004641.1	572	atgctgttataataagacttgc	6963	461811	see also 3155 line		
3158	MLLT10	NM_004641.1	636	tgggtcttgcatgacatgtaata	6966	461812	see also 3155 line		
3159	MLLT10	NM_004641.1	638	gtgcttgcatgacatgtaataa	6967	461813	see also 3155 line		
3160	MLLT10	NM_004641.1	639	tgtctgcatgacatgtaataaac	6968	461814	see also 3155 line		
3161	MLLT10	NM_004641.1	642	tgtcatgacatgtaataaacatg	6969	461815	see also 3155 line		
3162	MLLT10	NM_004641.1	746	tccaatacttggtgactgtataa	6977	461821	see also 3155 line		
3163	PABPN1	NM_004643.1	2115	ctcgattctacagtggttttaac	53195	485345	-		oculopharyngeal muscular dystrophy(眼球咽頭 型筋ジストロフィ)
3164	COIL	NM_004645.1	39	cagtttaggtacaggcttcaatt	324043	533869	-	ubiquitin C- terminal hydrolase	-
3165	USP11	NM_004651.2	1147	aagaacaagggtggccattttgc	188792	582840	-		-
3166	USP9X	NM_004652.2	605	tacacgtccatgtgaatcagttt	190480	583957	-		-
3167	USP9X	NM_004652.2	2567	aagacaggaagctgttcgaatgg	190505	583809	see also 3166 line		
3168	USP9X	NM_004652.2	3246	agcagccttagtcacatcttga	190520	583832	see also 3166 line		
3169	USP9X	NM_004652.2	4147	aacactcaggcgcactacttact	190534	583856	see also 3166 line		
3170	USP9X	NM_004652.2	4149	cactcagcgcactacttactct	190535	583857	see also 3166 line		
3171	USP9X	NM_004652.2	4153	caggcgactacttactcttta	190537	583858	see also 3166 line		
3172	USP9X	NM_004652.2	4154	aggcgactacttactcttttaa	190538	583859	see also 3166 line		

3173	USP9X	NM_004652.2	4155	ggcgactactttactctttaag	190539	583860	see also 3166 line		
3174	USP9X	NM_004652.2	4806	ggcacagtgatgatgatga	190557	583875	see also 3166 line		
3175	USP9X	NM_004652.2	6245	ttgatatgatcattgtgttc	190574	583914	see also 3166 line		
3176	USP9X	NM_004652.2	6467	tagtcagagcttagacaactaa	190578	583918	see also 3166 line		
3177	USP9X	NM_004652.2	6501	cacttactaagaagactactaaa	190579	583920	see also 3166 line		
3178	USP9X	NM_004652.2	7132	accgagatggcgtgtttgacaca	190582	583940	see also 3166 line		
3179	DDX3Y	NM_004660.2	1233	cagatgctgctcgtgaotttt	24920	483048	RNA binding		
3180	CDC23	NM_004661.2	824	ttgcaagttgcctatcacatctc	302244	801154	cell cycle		
3181	CDC23	NM_004661.2	1366	gtggaagcccaaaaggtttatg	302266	801173	see also 3180 line		
3182	CDC23	NM_004661.2	1562	atctggccagctactattttaag	302273	801179	see also 3180 line		
3183	CDC23	NM_004661.2	1565	tggccagctactattttaagtc	302274	801180	see also 3180 line		
3184	RAB11A	NM_004663.3	210	ctgtctcgattactcgaatga	109882	519861	protein transporter		
3185	RAB11A	NM_004663.3	214	ctcgatttactcgaatgagttt	109884	519862	see also 3184 line		
3186	RAB11A	NM_004663.3	215	tcgatttactcgaatgagttt	109885	519863	see also 3184 line		
3187	RAB11A	NM_004663.3	561	aagaatgtttgtcattcatga	109892	519875	see also 3184 line		
3188	HERC2	NM_004667.2	537	ttcaggagaatgtcaaaagtaag	229599	616186			
3189	HERC2	NM_004667.2	1306	gacatctcaataaggagatcatgc	229600	616195	see also 3188 line		
3190	HERC2	NM_004667.2	1334	gtcataggttggggtaantagg	229601	616196	see also 3188 line		
3191	HERC2	NM_004667.2	2082	aagatggccaagtatttcattg	229610	616209	see also 3188 line		
3192	PAPSS2	NM_004670.2	1517	gggtctcggatcccaagtaaac	95768	511319	kinase related	sulfate adenylyltransferase (ATP)	spondyloepimetaphyseal dysplasia(骨軟骨發育不全症)
3193	MIZ1	NM_004671.1	70	ggcttgcctggcagcaataaaag	32313	461727			
3194	MIZ1	NM_004671.1	144	ctgcagccctcgggttcagatta	32317	461731	see also 3193 line		
3195	MIZ1	NM_004671.1	148	agccctcgggttcagattaaat	32320	461732	see also 3193 line		
3196	MIZ1	NM_004671.1	149	ggcctgcggttcagattaaatc	32321	461733	see also 3193 line		
3197	MIZ1	NM_004671.1	150	ccctgcggttcagattaaatcc	32322	461734	see also 3193 line		
3198	MIZ1	NM_004671.1	428	atcctgatgtgcaggttaaaaaat	32329	461741	see also 3193 line		
3199	MIZ1	NM_004671.1	478	ctcatcaagccacagagtttagt	32330	461742	see also 3193 line		
3200	MIZ1	NM_004671.1	484	aagccacagagtttagttcaaaag	32331	461744	see also 3193 line		
3201	MIZ1	NM_004671.1	485	agccacagagtttagttcaaaag	32332	461745	see also 3193 line		
3202	MIZ1	NM_004671.1	892	cagcttacatcagccatgtatt	32353	461758	see also 3193 line		
3203	MIZ1	NM_004671.1	1027	tccttgatgtcccttaggaaa	32356	461764	see also 3193 line		
3204	MIZ1	NM_004671.1	1497	cccaacaaagggttctcatgt	32365	461774	see also 3193 line		
3205	MIZ1	NM_004671.1	1587	aacagactactcagttaccatcc	32369	461777	see also 3193 line		
3206	MIZ1	NM_004671.1	1689	ctgtcctctatgttttagata	32371	461778	see also 3193 line		
3207	MAP3K6	NM_004672.2	2095	tgggactctcaagatttctgact	89545	507379			
3208	ASH2L	NM_004674.1	582	aagataaggattattataccattt	332722	703113	transcription regulat		
3209	ASH2L	NM_004674.1	1161	atgatcagctcctccagttaaag	332730	703126	see also 3208 line		
3210	ASH2L	NM_004674.1	1611	ctcccatagttgagataatattt	332739	703138	see also 3208 line		
3211	RGN	NM_004683.3	864	gtgaagttgctgttgataaaac	152041	553004			
3212	RGN	NM_004683.3	867	aagttgctgttgataaaacac	152042	553005	see also 3211 line		

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3213	MTMR6	NM_004685.2	1191	aaggcttctgtcaatgatttc	195311	588602	phosphatase	protein serine/threonine phosphatase	-
3214	MTMR6	NM_004685.2	1233	cgggatgcttcgcacatacaaa	195312	588603	see also 3213 line	-	-
3215	MTMR4	NM_004687.3	283	tcgccctccgagatgattgacagt	158503	559001	phosphatase	-	-
3216	MTMR4	NM_004687.3	1182	tcggcactggagagaccacaaatg	158516	559011	see also 3215 line	-	-
3217	MTMR4	NM_004687.3	3625	agctgaagaacacccattgctaca	158558	559063	see also 3215 line	-	-
3218	MTA1	NM_004689.2	1065	aagttattatcccaactataac	7117	446002	transcription_regulat or、	transcription factor	-
3219	SLC16A4	NM_004696.1	665	ggcacccctttacaaaatctctga	257394	760569	-	symporter	-
3220	PRPF3	NM_004698.1	1308	tggaaatcaaaaatcttctgaac	46510	729836	-	-	retinitis pigmentosa(色素性網膜炎)
3221	CCNB2	NM_004701.2	166	cccgcacgggttcacagtgattgg	307138	673626	-	-	-
3222	RABEP1	NM_004703.2	212	tcccagccgcagctttctctca	169470	566180	-	-	-
3223	RABEP1	NM_004703.2	1444	atccaaagctttaggctataact	169495	566206	see also 3222 line	-	-
3224	RABEP1	NM_004703.2	1449	aagcttaggctataactacaaa	169496	566207	see also 3222 line	-	-
3225	RABEP1	NM_004703.2	1530	caggtctgagaactttgatact	169498	566210	see also 3222 line	-	-
3226	RABEP1	NM_004703.2	1773	aacttgtagacaggttgatgatg	169510	566218	see also 3222 line	-	-
3227	RABEP1	NM_004703.2	1812	aacagttacaaggaattcagatt	169515	566221	see also 3222 line	-	-
3228	PRKRIR	NM_004705.2	115	aggagagcagacttagaagataa	37034	690545	signal_transduction	protein binding	-
3229	PRKRIR	NM_004705.2	230	ttcgagataatgcaataccaaca	37042	690553	see also 3228 line	-	-
3230	PRKRIR	NM_004705.2	257	ttgatctaccagtcatttgaac	37043	690554	see also 3228 line	-	-
3231	SDCCAG1	NM_004713.2	323	gagattagtcagtcacaaacagc	332754	716345	-	-	colorectal cancer(大腸癌)、colorectal cancers(結腸直腸癌)
3232	SDCCAG1	NM_004713.2	1847	tggcacatggcactttgctaca	332797	716393	see also 3231 line	-	-
3233	SDCCAG1	NM_004713.2	1904	ttggtgggtgaccatcatcagg	332801	716397	see also 3231 line	-	-
3234	SDCCAG1	NM_004713.2	2011	atctaataatgggttttagcttc	332805	716401	see also 3231 line	-	-
3235	DYRK1B	NM_004714.1	450	agcacatcaatggaggtatactat	80972	500960	kinase_related	-	-
3236	DYRK1B	NM_004714.1	462	aggatactatgcgaagaagaag	80973	500962	see also 3235 line	-	-
3237	PCSK7	NM_004716.2	1017	ggcgtcaacaagcactatcaga	183170	576850	-	subtilase	-
3238	ARHGEF2	NM_004723.2	255	tcacacacccgtgtaagaacacc	172126	697376	signal_transduction	guanyl-nucleotide release factor	-
3239	ARHGEF2	NM_004723.2	952	cagcacccggaactttgtcatcc	172133	697383	see also 3238 line	-	-
3240	DDX21	NM_004728.1	1251	tggaccctgattgtaaaaagact	50674	473484	-	ATP dependent RNA helicase	-
3241	DDX21	NM_004728.1	1488	gggaatatcacccctgaaaggttt	50680	473491	see also 3240 line	-	-
3242	ETF1	NM_004730.1	327	acgagtaaacgcctttcagtcoc	51443	477889	-	translation release factor、codon specific	-
3243	ETF1	NM_004730.1	630	aagagaagcttcgcacaaattca	51457	477902	see also 3242 line	-	-
3244	ETF1	NM_004730.1	697	ttgcgtttgcccgtttaagaat	51458	477904	see also 3242 line	-	-
3245	ETF1	NM_004730.1	698	tgcgtttgcccgtttaagaatg	51459	477905	see also 3242 line	-	-
3246	ETF1	NM_004730.1	921	tggattcaaccacagctattgagt	51466	477910	see also 3242 line	-	-



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3247	EIF1	NM_004730.1	1369	atcttgggtacccagtagattt	51483	477927	see also 3242 line	
3248	EIF1	NM_004730.1	1374	gcggtagcagagtagattccagg	51484	477928	see also 3242 line	
3249	SLC16A7	NM_004731.3	1044	tagccctctctgtaggattatg	257473	641031	-	symporter
3250	SLC33A1	NM_004733.2	1519	atgcctacacattattgcttgg	273097	705800	-	-
3251	SLC33A1	NM_004733.2	1563	ttggtgagctcctaaagtagaac	273098	705803	see also 3250 line	
3252	SLC33A1	NM_004733.2	1719	aacatacatgaccccttttaata	273111	705814	see also 3250 line	
3253	DCAMK1	NM_004734.1	1490	tcgaggcaagagcacatgatcc	77997	499455	kinase related	receptor signaling protein
3254	XPR1	NM_004736.2	406	cagcgaagttgtctacactcoa	243626	638567	gpcr,	-
3255	XPR1	NM_004736.2	412	aggttgtctacacttcagaatga	243627	638568	signal transduction	-
3256	XPR1	NM_004736.2	706	gaggtggcccccattttatcatg	243632	638575	see also 3254 line	
3257	XPR1	NM_004736.2	976	atctatgggggtggctttctct	243639	638580	see also 3254 line	
3258	XPR1	NM_004736.2	1248	cccaccacaaacttctactata	243650	638588	see also 3254 line	
3259	XPR1	NM_004736.2	1249	cccaccacaaacttctactata	243651	638589	see also 3254 line	
3260	XPR1	NM_004736.2	1388	tggacctggaatatatgatctgc	243653	638592	see also 3254 line	
3261	XPR1	NM_004736.2	1973	ggcgatttgggaactcttc	243675	638619	see also 3254 line	
3262	XPR1	NM_004736.2	2209	gcacataagggtattagataaga	243687	638630	see also 3254 line	
3263	LARGE	NM_004737.2	634	cccgaccatcaactggattacc	212153	600702	-	-
3264	LARGE	NM_004737.2	2158	gggtacacacatggtacaaagg	212169	600718	see also 3263 line	
3265	VAPB	NM_004738.3	482	gtgatgtacagcccttcgatta	292743	662473	-	-
3266	VAPB	NM_004738.3	485	atgttacagccttctogattatga	292744	662474	see also 3265 line	
3267	VAPB	NM_004738.3	600	aaccgaagacattatggattca	292745	662477	see also 3265 line	
3268	VAPB	NM_004738.3	663	aaccacatgatgtagaataaat	292748	662479	see also 3265 line	
3269	MTA2	NM_004739.2	1289	tagtccagttttattacatgtgg	7145	446048	transcription_regulat	-
3270	MTA2	NM_004739.2	1314	aaccacagacccggtattatcagc	7146	446049	or,	-
3271	MTA2	NM_004739.2	1930	ctggcaactatctcaagatct	7159	446061	see also 3269 line	
3272	MTA2	NM_004739.2	2114	ctctggcttcaggagttcgttca	7162	446063	see also 3269 line	
3273	RPS6KA5	NM_004755.2	1418	acgtcctggagtgacaaatgttg	99866	489338	kinase related,	-
3274	ITGB1BP1	NM_004763.2	584	atccggatgggtgttgcagtaga	126205	697308	transcription_regulat	-
3275	PWIL1	NM_004764.2	1751	aagtaatcgaagagacaaatacg	332973	472480	or,	-
3276	COPB2	NM_004766.1	945	ggagacatcatgttaagcttgg	125174	650989	kinase related	protein transporter
3277	COPB2	NM_004766.1	1177	gtgtgtatggggaggtatcatc	125182	650993	see also 3276 line	
3278	COPB2	NM_004766.1	1178	tgggtatggggaggtatcatc	125183	650994	see also 3276 line	
3279	COPB2	NM_004766.1	1183	atggggaggtatcatcatcaca	125185	650995	see also 3276 line	
3280	COPB2	NM_004766.1	1249	ttgcattggccacagattcttca	125186	650996	see also 3276 line	
3281	COPB2	NM_004766.1	1257	ggccacgattcttcagagtatgc	125187	650997	see also 3276 line	
3282	COPB2	NM_004766.1	1402	atgacttagccttctatgactgg	125192	651002	see also 3276 line	
3283	MMP20	NM_004771.2	641	aagtggaactatgggaacgaatgg	158266	558819	-	zinc binding

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[illegible]

3323	LHX2	NM_004789.3	1127	cgcgcctggggaacttgattatca	6143	445316	see also 3321 line	
3324	LHX2	NM_004789.3	1129	cgcctgggaacttgattatcaacc	6144	445317	see also 3321 line	
3325	SLC22A6	NM_004790.3	976	cacctgattgctatgctaca	267191	654134	-	-
3326	SLC22A6	NM_004790.3	1340	ctgtggttgccactagcttgc	267194	654140	see also 3325 line	-
3327	ITGBL1	NM_004791.1	700	agggtgaagtgtgataattcaaga	290434	660346	-	-
3328	ITGBL1	NM_004791.1	801	tggaggccatgggaagtgtact	290438	660352	see also 3327 line	-
3329	NRXN3	NM_004796.2	1603	agctcattgtaacttagactgt	236909	775694	receptor activity	-
3330	NRXN3	NM_004796.2	1609	tggtaacttaacttagatcaagg	236910	775695	see also 3329 line	-
3331	NRXN3	NM_004796.2	3528	agggacgagggggtctatcaagt	236933	775727	see also 3329 line	-
3332	TM9SF2	NM_004800.1	817	aagattagtggctgctaaacttg	275272	657721	transporter	-
3333	TM9SF2	NM_004800.1	1077	ctggaatggtagctatgattag	275285	657736	see also 3332 line	-
3334	TM9SF2	NM_004800.1	1585	gacgtttattggctacacttg	275299	657743	see also 3332 line	-
3335	TM9SF2	NM_004800.1	1776	cacaccagatgtattacatgttt	275308	657751	see also 3332 line	-
3336	NRXN1	NM_004801.2	1557	tcccaagcaaggagatctaaaga	319254	683803	-	-
3337	NRXN1	NM_004801.2	1940	acggagcgtcaggtaacattct	319264	683818	see also 3336 line	-
3338	NRXN1	NM_004801.2	2428	ttccgattccagcgtgcatatgg	319281	683828	see also 3336 line	-
3339	NRXN1	NM_004801.2	2528	cgttcaatcttagattgtatcagg	319286	683836	see also 3336 line	-
3340	NRXN1	NM_004801.2	2920	aagacccaatcgactatgtgc	319296	683851	see also 3336 line	-
3341	NRXN1	NM_004801.2	3909	agggcgctcagctcacaacttca	319330	683884	see also 3336 line	-
3342	NMT2	NM_004808.1	1033	cagaattccagatgttacaaga	215486	602778	glycyl-peptide N-tetradecanoyltransferase	-
3343	STOML1	NM_004809.3	1002	ggggcctgtaccagttcaatgt	179471	572852	-	-
3344	LPXN	NM_004811.1	648	tggctccagtcctctcttgagc	302628	671095	signal transduction	-
3345	PARG1	NM_004815.2	946	tgggaattggagtcacttagaagt	296892	680607	signal transduction	-
3346	PARG1	NM_004815.2	2522	tccattgtacaaggaatttatag	296945	680651	see also 3345 line	-
3347	TJP2	NM_004817.1	2772	aagaccgatgtctctacttaact	317477	682135	kinase related	membrane-associated
3348	ECCL1	NM_004826.1	1909	ggcgctcaatgcctactatctac	156533	557531	signal transduction	guanylate kinase
3349	MAP4K4	NM_004834.2	1908	aacgcttcagagtgagatcatca	333066	507500	-	zinc binding
3350	MAP4K4	NM_004834.2	2076	tacggccaccctcacaagaagtaacg	333067	507504	see also 3349 line	-
3351	MAP4K4	NM_004834.2	2341	tagtagcacactccagaaacaca	333071	507509	see also 3349 line	-
3352	MAP4K4	NM_004834.2	3181	tagcatcaaacccccatgcaatca	333097	507533	see also 3349 line	-
3353	EIF2AK3	NM_004836.2	1086	cactttgaacttcggtatattcc	81227	501381	-	protein serine/threonine kinase
3354	EIF2AK3	NM_004836.2	1290	tgggagtagcgaagtttgtactcc	81232	501383	see also 3353 line	epiphyseal dysplasia (多発性少年性骨障害)、diabetes (糖尿病)
3355	ARHGEF6	NM_004840.1	331	tactcttttagctgtcaacaaga	294833	767228	apoptosis, kinase related	guanyl-nucleotide release factor
3356	ARHGEF6	NM_004840.1	1766	ttagagctctctcaaatataaa	294873	767267	see also 3355 line	mental retardation (精神遅滞)
3357	ARHGEF6	NM_004840.1	1767	tggagctctctcaaatataaaa	294874	767268	see also 3355 line	-
3358	EIF4EL3	NM_004846.1	172	agcatccctccagtaaacacac	49297	473631	-	-
3359	APG5L	NM_004849.1	419	agcagaaccactactattgtcttt	310375	676419	apoptosis	-

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3360	APG5L	NM_004849.1	461	gacgttgtaactgacaaagtga	310376	676421	see also 3359 line	
3361	APG5L	NM_004849.1	560	atggcattatcaaatgtgttgc	310380	676422	see also 3359 line	
3362	APG5L	NM_004849.1	586	ttgatcttgcatacaagtca	310383	676424	see also 3359 line	
3363	APG5L	NM_004849.1	834	oggaactactggaatactctgc	310390	676433	see also 3359 line	
3364	ROCK2	NM_004850.2	1575	aactagcagtgacatagacgc	99302	513639	kinase_related	-
3365	ROCK2	NM_004850.2	1913	gagatcctctacgaaagtgt	99314	513650	see also 3364 line	
3366	ROCK2	NM_004850.2	2054	aacagcttaagatacaactga	99318	513655	see also 3364 line	
3367	ROCK2	NM_004850.2	2246	aacatagagatctacaagataa	99328	513661	see also 3364 line	
3368	ROCK2	NM_004850.2	2507	aacatgaaatagatatcacata	99331	513669	see also 3364 line	
3369	ROCK2	NM_004850.2	3308	gagatgatgcttagcacacaaca	99354	513687	see also 3364 line	
3370	ROCK2	NM_004850.2	3547	aactaagctgtgaataagttgg	99360	513692	see also 3364 line	
3371	ROCK2	NM_004850.2	4473	gggttagtcggttggtgaaag	99389	513718	see also 3364 line	
3372	ONECUT2	NM_004852.1	92	aaccggagctgacaatggaaag	8769	810109	transcription_regulat	translation regulator
3373	ONECUT2	NM_004852.1	93	accggagctgacaatgaaagt	8770	810110	or	-
3374	CHST10	NM_004854.2	365	cgcgatgctttgggtgatttc	217431	605528	see also 3372 line	-
3375	CHST10	NM_004854.2	869	agcgttgaaacatactctcaag	217436	605538	see also 3374 line	-
3376	SLC4A8	NM_004858.1	44	acgggtctctcagctatcacaga	258458	642848	-	-
3377	FXR2	NM_004860.2	719	gggagccaaactgcctctttcca	51838	473899	-	RNA binding
3378	SPTLC2	NM_004863.2	356	aagaccgtttaatgaagcttttg	215982	603204	-	transaminase
3379	SPTLC2	NM_004863.2	702	aacatggatctctacaactatct	215991	603212	see also 3378 line	-
3380	SPTLC2	NM_004863.2	705	atgggttctctacaactatcttg	215992	603213	see also 3378 line	-
3381	SPTLC2	NM_004863.2	710	ttctcaactatcttggatttg	215993	603214	see also 3378 line	-
3382	SPTLC2	NM_004863.2	1726	cagcagctcatccaaaagataa	216025	603246	see also 3378 line	transcription co-activator
3383	TBPL1	NM_004865.2	509	tgcactggagcaacaagtgaaga	41620	468729	-	-
3384	TBPL1	NM_004865.2	559	agccogtagtctcagaaactag	41621	468730	see also 3383 line	-
3385	C1orf8	NM_004872.3	763	agccgatgacggaaaaatagta	326103	709314	-	-
3386	C1orf8	NM_004872.3	764	gccgatgacggaaaaatagttat	326104	709315	see also 3385 line	-
3387	BAG4	NM_004874.2	931	ctgcccattatctctatggaga	129153	532445	apoptosis	receptor signaling protein
3388	EI24	NM_004879.2	320	aaccacgtattgttagtagaatt	310981	696340	apoptosis	-
3389	EI24	NM_004879.2	321	accacgtattgttagtagaatt	310982	696341	see also 3388 line	-
3390	EI24	NM_004879.2	837	aaggaattggccttactactttg	310993	696359	see also 3388 line	-
3391	OXCL14	NM_004887.3	603	cogctacagcgcagtggaagc	167388	564454	signal transduction	chemokine
3392	SPAG7	NM_004890.1	310	ctgtcgtatgctatgatttca	66219	486356	-	-
3393	SPAG7	NM_004890.1	312	gtcgtatgctatgatttcaaa	66220	486357	see also 3392 line	-
3394	SEC22L1	NM_004892.3	202	eggaccttcaacagatcacagat	305084	673306	-	-
3395	SEC22L1	NM_004892.3	221	gagtcagctgaagcaactcttc	305085	673307	see also 3394 line	-
3396	SEC22L1	NM_004892.3	226	aggctaaagcaactcttcgaaag	305086	673308	see also 3394 line	-
3397	SEC22L1	NM_004892.3	227	ggctaaagcaactcttcgaaagt	305087	673309	see also 3394 line	-
3398	CLOCK	NM_004898.2	784	ttgggatcaagatatttaatt	2292	442742	transcription_regulat	transcription factor
3399	CLOCK	NM_004898.2	1276	atcatgtggtgacacctagsaat	2299	442759	or, see also 3398 line	-

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3400	CLOCK	NM_004898.2	1386	tggcttcagactcattattat	2304	442767	see also 3398 line		
3401	CLOCK	NM_004898.2	1387	ggcttcagactcattattatc	2305	442768	see also 3398 line		
3402	CLOCK	NM_004898.2	1534	ctgtgacaaaacgaagattct	2311	442771	see also 3398 line		
3403	BRE	NM_004899.3	263	tggatgctacaaactgtttgagg	235339	620328	signal_transduction	-	uridine diphosphatase
3404	LYSAL1	NM_004901.1	1431	ttcaacttcagacacagtgaaattc	166356	563752	phosphatase	-	
3405	RNPC2	NM_004902.2	684	ttgcttcctagcatcaacaattaag	54322	475367	transcription_regulat	-	
3406	RNPC2	NM_004902.2	685	tgcctcagcatcaacaattaagc	54323	475368	see also 3405 line		
3407	RNPC2	NM_004902.2	1337	tgccttcagtgctagtcatttt	54347	475392	see also 3405 line		
3408	RNPC2	NM_004902.2	1340	ttcgagtgctagtcatttttgg	54348	475393	see also 3405 line		
3409	CREB5	NM_004904.1	153	cccaacagaggaccatctgatga	24583	648472	transcription_regulat	-	
3410	CREB5	NM_004904.1	1367	aacagtggtgtaacacataaa	24594	457395	see also 3409 line		
3411	CREB5	NM_004904.1	1369	cagttgttgaacacataaaga	24595	457396	see also 3409 line		
3412	PITPNM1	NM_004910.1	1957	cgccgtgggagcatgaacaatga	166989	564196	-	-	
3413	CCM1	NM_004912.3	1367	gcttggtataagtggttagatga	297476	687216	signal_transduction		cerebral cavernous malformations(-)
3414	CCM1	NM_004912.3	1516	gggctatagtgcaactagaataa	297481	687226	see also 3413 line		
3415	CCM1	NM_004912.3	1524	gtgcaactagaataaagagataa	297483	687227	see also 3413 line		
3416	CCM1	NM_004912.3	1593	ttggatcagatcttcagtatata	297484	687228	see also 3413 line		
3417	CCM1	NM_004912.3	1612	tacaatcgggtagatgaagaagg	297485	687230	see also 3413 line		
3418	CCM1	NM_004912.3	1663	tcacagactcaactcaaaaataa	297491	687232	see also 3413 line		
3419	CCM1	NM_004912.3	1853	cactgggacccattcattatgt	297498	687239	see also 3413 line		
3420	CCM1	NM_004912.3	1857	gggacccattcattatgcacgc	297499	687241	see also 3413 line		
3421	CCM1	NM_004912.3	2462	gaccacactagctattcttattct	297513	687266	see also 3413 line		
3422	SEC24C	NM_004922.2	1401	ggaggaggttcacogtatgtgt	118912	776217	-	protein transporter	-
3423	SEC24C	NM_004922.2	1580	cgccaaacgtgtgagatgctatg	118917	776219	see also 3422 line		
3424	SEC24C	NM_004922.2	2455	ctggtatccgtgctgagatttc	118936	776234	see also 3422 line		
3425	SEC24C	NM_004922.2	2456	tggatccgtgctgtagatttct	118937	776235	see also 3422 line		
3426	SEC24C	NM_004922.2	2460	atccgtgctgtagatttcttgg	118938	776236	see also 3422 line		
3427	ACTN4	NM_004924.3	441	tccatcggggcagaagagattgt	114868	521238	-	structural constituent of cytoskeleton	-
3428	CALB1	NM_004929.2	263	aagtggttacctgggaagaagagg	129558	545126	-	protein binding	-
3429	CAPZB	NM_004930.1	384	tgtctggagtgatcctcataaaga	114023	521041	-	structural constituent of cytoskeleton	-
3430	CAPZB	NM_004930.1	387	tggagtgatcctcataaagaagg	114025	521042	see also 3429 line		
3431	CDH6	NM_004932.2	1562	tgcagggaatccgtgcaagttact	140235	545826	-	calcium ion binding	-
3432	CDH6	NM_004932.2	1976	aactcgggaataatggctataata	140248	545846	see also 3431 line		
3433	CTNS	NM_004937.1	722	agggtattgctgagatctacttt	271786	673448	-	cystine transporter	-

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[illegible]

3467	KCN2	NM_004974.2	1948	ggctaacaacaaactatgtgaata	132254	536221	see also 3464 line		
3468	KCNB1	NM_004975.2	2387	cacagcaatagcttcaactttg	132337	536347	channel	protein binding	-
3469	KCNB1	NM_004975.2	2571	cccacctcccttaagtcttaag	132345	536349	see also 3468 line		
3470	KCNC1	NM_004976.2	1460	agctgggatctcccaattattgt	132414	536360	channel	voltage-gated potassium channel	-
3471	KCNC4	NM_004978.2	197	aagctctcgtccaaaacatgtct	132467	536379	channel		-
3472	KCNC4	NM_004978.2	238	ggcgagcgcgcgagagaagatca	132468	536380	see also 3471 line		
3473	KCND3	NM_004980.3	1955	ttgtgatgatccctgttatct	132532	536479	channel		-
3474	KIF5A	NM_004984.1	1253	cgttgccgaatggagagaatgt	87691	505912	-	motor	-
3475	KIF5A	NM_004984.1	1255	gtggcgcaatggagagaatgtgc	87692	505913	see also 3474 line		
3476	KIF5A	NM_004984.1	2539	tgcgaagctgttcgttcaagacg	87711	505924	see also 3474 line		
3477	KIF5A	NM_004984.1	2561	gtcagcagctcgttcgaagaaag	87712	505925	see also 3474 line		
3478	KIF5A	NM_004984.1	2708	ctgcgttgtgagcttctcaatt	87714	505930	see also 3474 line		
									alveolar cell carcinoma(肺胞上皮癌)、colorectal cancer(大腸癌)、breast cancer(乳癌)、endometrial cancer(子宮癌)、lung cancer(肺癌)、leukemia(白血病)、ovarian cancer(原発性卵巣癌)、pancreatic cancer(膵臓癌)、colorectal
3479	KRAS2	NM_004985.3	328	aaactgtctcttgataattctg	109472	519657	cell_cycle, signal_transduction		-
3480	KRAS2	NM_004985.3	450	ttgaagataatcaccattataga	109475	519659	see also 3479 line		-
3481	KTNI	NM_004986.1	1866	cagacctccgttcgaattctagc	281216	687664	-		-
3482	MECP2	NM_004992.2	894	accaggtcatgtgtatcaaacg	32155	461638	transcription_regulat or	transcription co-repressor	Rett syndrome(レット症候群)
3483	MECP2	NM_004992.2	1503	cgcctgtacagagagagattagc	32160	461644	see also 3482 line		
3484	MJD	NM_004993.2	614	atgcacatgacacaaactatttg	300594	669080	or		Machado-Joseph disease(マシヤド・ジョセフ病)、spinocerebellar ataxia(脊髄小脳失調)
3485	MJD	NM_004993.2	905	aagagacagagagacactacttga	300601	669087	see also 3484 line		
3486	MJD	NM_004993.2	907	gagagagagagagacactacttga	300602	669088	see also 3484 line		
3487	MJD	NM_004993.2	909	gacgagagagagacactacttga	300603	669089	see also 3484 line		
									oral cavity cancers(口腔癌)、chondrosarcoma(軟骨肉腫)、rheumatoid arthritis(関節リウマチ)、laryngeal cancer(喉頭癌)、CNS Tumours(中枢神経腫瘍)、head and neck cancer(頭頸部癌)
3488	MMP14	NM_004995.2	1258	tggcgggttgaggagataaacaagt	158115	558648	-	zinc binding	-
3489	ABCC1	NM_004996.2	448	ctgctggcagacactcttctact	69965	492031	kinase_related		
3490	ABCC1	NM_004996.2	454	ggcagacctcttactcttct	69966	492032	see also 3489 line		
3491	ABCC1	NM_004996.2	1507	ggccacgtacataacatgatct	69978	492059	see also 3489 line		
								structural constituent of muscle	-
3492	MYBPH	NM_004997.1	1042	cgggtctctcagaaaacactgt	289291	677879	-		-
3493	MYO1E	NM_004998.1	1150	ctgcacgcacatgaatgtgttg	92876	805290	-		-
								structural constituent of muscle	-
3494	MYO6	NM_004999.1	424	tgcagtgaatccactacttgaca	93382	509776	-		-
3495	MYO6	NM_004999.1	729	ctgttcgacaacaataagcagt	93391	509783	see also 3494 line		
3496	MYO6	NM_004999.1	737	aacaataatagcagctgattgg	93392	509784	see also 3494 line		

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3497	MYO6	NM_004999.1	2509	cagtcgctggaagaagaagttcagt	93445	509819	see also 3494 line			
3498	MYO6	NM_004999.1	2998	aagcggatgaaacttgatgagtg	93459	509827	see also 3494 line			mitochondrial complex deficiency(ミトコンドリア)
3499	NDUFS1	NM_005006.5	1773	gagcagatggaggtgtatcaca	222822	610123	-	iron-sulfur electron transfer		白複合体欠損症
3500	NDUFS1	NM_005006.5	1805	ttgccaaagattgtttcattat	222824	610125	see also 3499 line			
3501	NDUFS1	NM_005006.5	2178	ttgttcacctgaagtaactata	222833	610134	see also 3499 line			
3502	NDUFS1	NM_005006.5	2187	ctcagctaactataaagacttc	222834	610137	see also 3499 line			
3503	NRCAM	NM_005010.1	459	cagagtcctccctgattctctcc	333368	791134	channel	-		
3504	NRCAM	NM_005010.1	590	acctcgggagaattatgtaac	333371	791135	see also 3503 line			
3505	NRCAM	NM_005010.1	2379	tagcccaattacaaaattcaca	333434	791217	see also 3503 line			
3506	ROR1	NM_005012.1	712	ggctctcggtcggtgattgaaa	99404	513730	receptor activity, kinase related, signal transduction	transmembrane receptor protein tyrosine kinase	-	
3507	ROR1	NM_005012.1	3155	gacacacgaatctatgattct	99464	513786	see also 3506 line			
3508	ROR1	NM_005012.1	3157	cacacgaatctatgattctgc	99465	513787	see also 3506 line			
3509	NUCB2	NM_005013.1	887	caggaaagcaagatcaactaaaa	34207	463190	-	calcium ion binding	-	
3510	OMD	NM_005014.1	414	ctgtgactgcaatttcattcatc	319394	683901	-	-	-	
3511	PDE1C	NM_005020.1	1502	tacgagacatgaccgagagaagatg	198011	590023	signal transduction, kinase related, signal transduction	calmodulin- dependent cyclic- nucleotide phosphodiesterase	-	
3512	PIK3CD	NM_005026.2	2069	tggactcgagctgaccaaattc	207459	597438	-	phosphatidylinosito l 3-kinase, class	-	
3513	PLS3	NM_005032.3	1040	aaccacgagatagattatacatg	118817	523582	-	calcium ion binding	-	
3514	PLS3	NM_005032.3	1041	accacggatagattataacatgt	118818	523583	see also 3513 line			
3515	PLS3	NM_005032.3	1043	cacggatagattataacatgtca	118819	523584	see also 3513 line			
3516	PLS3	NM_005032.3	1057	aacatgtcaggtttcaatgaaac	118820	523585	see also 3513 line			
3517	PLS3	NM_005032.3	1112	aacaagcagataaattagggtgc	118824	523589	see also 3513 line			
3518	PMSC1	NM_005033.1	562	tacgtgtagacctacattatta	53349	474843	-	3'-5' exoribonuclease	-	
3519	PPARG	NM_005037.3	341	gcctgcattctccaccttattatt	9763	447955	receptor activity, transcription regulat	-	-	obesity(肥満), atherosclerosis(粥状硬化症), diabetes mellitus(糖尿病), lipodystrophy(リポジ ストロフィー), diabetes(糖尿病)
3520	PPARG	NM_005037.3	553	gtcggatccacaaaaaagtaga	9770	447964	see also 3519 line			
3521	PPARG	NM_005037.3	679	tggcggagatctccagtatcatc	9772	447965	see also 3519 line			
3522	PPARG	NM_005037.3	801	gcgactcttgacaggaagacacac	9774	447968	see also 3519 line			
3523	RELN	NM_005045.2	2104	aggattcgtggagacacacagg	183909	577764	-	-	-	schizophrenia(精神分裂症)
3524	RELN	NM_005045.2	5006	tgcgaagccaactgtgtatcgaac	183990	577826	see also 3523 line			
3525	ABCD4	NM_005050.1	1457	cccttcgggagcaggtgatata	70966	492765	-	-	-	
3526	RBBP5	NM_005057.1	1573	gcctaaaggatcaaaaggttaag	324882	775084	-	-	-	
3527	RBBP5	NM_005057.1	1605	ctccatttaaacccgaactctac	324883	775085	see also 3526 line			
3528	RBBP5	NM_005057.1	1606	tccatttaaacccgaactctaca	324884	775086	see also 3526 line			



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3529	RORC	NM_005060.2	127	aagaccacacacctcacaaattga	10795	448184	receptor_activity, transcription_regulat	steroid hormone receptor	-
3530	RORC	NM_005060.2	129	gaccacacacctcacaaattgaag	10796	448185	see also 3529 line	pre-mRNA splicing factor	renal cell carcinoma(腎臓癌)
3531	SFPQ	NM_005066.1	1478	cagaagaatccaatgatatacaaaa	39200	486224	-	-	-
3532	SFPQ	NM_005066.1	1990	aggtgggtggtagctagattatg	39216	486235	see also 3531 line	-	-
3533	SFPQ	NM_005066.1	1993	tgggtggtagctagattatgaag	39217	486236	see also 3531 line	-	-
3534	SFPQ	NM_005066.1	1999	tggcataggtatgaagctaactc	39218	486237	see also 3531 line	-	-
3535	SLAH2	NM_005067.4	619	ggcacctgggtgtgaaccaatgc	113317	670815	transcription_regulat or, apoptosis, cell_cycle, signal_transduction	-	-
3536	SIM1	NM_005068.2	338	gactcaagacacagctatctcaaa	11210	448398	transcription_regulat or,	transcription factor	obesity(肥満)
3537	SIM1	NM_005068.2	342	cacgaccagctatctcaaatga	11211	448400	see also 3536 line	-	-
3538	SIM2	NM_005069.2	372	gagaccgctctgtccatttagg	11252	467048	transcription_regulat or,	-	-
3539	SIM2	NM_005069.2	1025	ctgcctcgtgagtgcaattatg	11267	467060	see also 3538 line	-	-
3540	SLC4A3	NM_005070.1	210	agcggagcgggacttgagttcca	258442	642769	-	inorganic anion exchanger	-
3541	SLC1A6	NM_005071.1	256	accggcagatcaagtaactctct	257697	641226	-	sodium:dicarboxylate/tricarboxylate cotransporter	-
3542	SLC1A6	NM_005071.1	395	gcgggcagctgtgtactacatgg	257699	641228	see also 3541 line	-	-
3543	SLC1A6	NM_005071.1	901	gcctcaatgaggtcttatatgagg	257701	641238	see also 3541 line	-	-
3544	SLC12A4	NM_005072.3	1895	cccggttcaagtactactactcagg	257221	640750	cell_cycle	-	-
3545	SLC15A1	NM_005073.1	1188	gtgcagggtggaatcgataaaac	256442	643992	-	peptide:hydrogen symporter	-
3546	TLE3	NM_005078.1	1055	cgggcatggaccctgtaggtata	300957	669480	signal_transduction, transcription_regulat	-	-
3547	TLE3	NM_005078.1	1056	gggcatggaccctgtaggtataa	300958	669481	see also 3546 line	-	-
3548	TLE3	NM_005078.1	1057	ggcatggaccctgtaggtataat	300959	669482	see also 3546 line	-	-
3549	XBP1	NM_005080.2	428	tagttgagaacacaggaggttaaga	13956	470342	transcription_regulat or	transcription factor	-
3550	FXR1	NM_005087.1	55	ttctacaaggagattatcaaga	51758	473847	apoptosis	RNA binding	-
3551	FXR1	NM_005087.1	162	accacacctgatatataaaaaag	51768	473850	see also 3550 line	-	-
3552	FXR1	NM_005087.1	347	ttcgccctgtcaatcaataataa	51773	473854	see also 3550 line	-	-
3553	FXR1	NM_005087.1	1197	cacctccggttaggtacaaatt	51810	473881	see also 3550 line	-	-
3554	FXR1	NM_005087.1	1198	acctccggttaggtacaaattc	51811	473882	see also 3550 line	-	-
3555	FXR1	NM_005087.1	1201	tccggttaggtacaaattctga	51812	473883	see also 3550 line	-	-
3556	FXR1	NM_005087.1	1203	cgggttaggtacaaattctgagc	51813	473884	see also 3550 line	-	-
3557	FXR1	NM_005087.1	1436	atccatcacagcttacttataat	51817	473887	see also 3550 line	-	-

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3558	FXR1	NM_005087.1	1443	cagcttacttgataatacagaat	51820	473888	see also 3550 line		
3559	ZNF261	NM_005096.1	492	ttcaacctgaggagctactagagc	44713	709357	—	DNA binding	—
3560	ZNF261	NM_005096.1	517	ttggctccagattctccaataac	44714	709358	see also 3559 line		
3561	ZNF261	NM_005096.1	518	tggctccagattctccaataaca	44715	709359	see also 3559 line		
3562	ZNF261	NM_005096.1	895	atggtagatgaccccaatgaga	44719	709362	see also 3559 line		
3563	ZNF261	NM_005096.1	1409	gggccaacaaggagctgaaaccc	44723	709366	see also 3559 line		
3564	ZNF261	NM_005096.1	1584	ctggtgcaagaccctgtgtaaga	44726	709369	see also 3559 line		
3565	ZNF261	NM_005096.1	1591	aagaccctgtgtaagaacttga	44727	709370	see also 3559 line		
3566	ZNF261	NM_005096.1	1665	gtgctgtaccactcttacaag	44729	709372	see also 3559 line		
3567	ZNF261	NM_005096.1	1666	tgtgtaccactcttacaag	44730	709373	see also 3559 line		
3568	ZNF261	NM_005096.1	2558	cagcaacaccgccgcaaaacaag	44739	709386	see also 3559 line		
3569	ZNF261	NM_005096.1	3456	tcggccaatgtgaacgatg	44762	709402	see also 3559 line		
3570	ZNF261	NM_005096.1	3457	cggccaatgtgaacgatataga	44763	709403	see also 3559 line		
3571	ZNF261	NM_005096.1	3578	tgttcaagaactcaacaagtct	44768	709410	see also 3559 line		
3572	ZNF261	NM_005096.1	3724	atgttcttaacactaagt:ttt	44769	709414	see also 3559 line		
3573	ZNF261	NM_005096.1	3841	gtgtgagcatccgtactatgc	44771	709415	see also 3559 line		
3574	LG11	NM_005097.1	260	ctgcattccctgaagaattg	309168	710200	—	—	CNS Tumours(中枢神経腫瘍)
3575	LG11	NM_005097.1	348	tgcctgcggtgtacttgtac	309169	710201	see also 3574 line		
3576	LG11	NM_005097.1	1870	aacatgcatagtgaactaagc	309236	710263	see also 3574 line		
3577	ADAMTS4	NM_005099.2	2613	atgcctcaatgtgtgaatacag	155601	556380	—	zinc binding	—
3578	FEZ1	NM_005103.3	364	atgtctgctttcggaactacaac	312524	808706	—	—	esophageal cancer(食道癌), squamous cell cancer(扁平上皮癌)
3579	FEZ1	NM_005103.3	472	atgtctgaacaggaactatac	312525	808707	see also 3578 line		
3580	FEZ1	NM_005103.3	1286	tacttctgaacaggaactacatt	312533	808712	see also 3578 line		
3581	GFPT2	NM_005110.1	1122	gagaggtgggtgaaatttgaaa	174684	568573	—	sugar binding	—
3582	CRYZL1	NM_005111.5	727	tggcctggagagtagatattgtcc	156392	557412	—	—	—
3583	CRYZL1	NM_005111.5	756	ctggagtgagattatattagtaa	156394	557415	see also 3582 line		
3584	CRYZL1	NM_005111.5	757	tggagtgagattatattagtaaag	156395	557416	see also 3582 line		
3585	WDR1	NM_005112.3	776	gtcaactgtgtgagattctctcc	120153	524969	—	—	—
3586	WDR1	NM_005112.3	1469	gtcgtgtgcatgtggacagattgt	120166	524987	see also 3585 line		
3587	GOLGA5	NM_005113.2	2136	ctgcgaaaatgtctctgtctttt	321683	686299	—	—	—
3588	GOLGA5	NM_005113.2	2171	aactaatctggcaggaatgtacg	321684	686301	see also 3587 line		
3589	SLC23A2	NM_005116.4	852	atgcagggttaccctgtttcagg	256235	640358	—	—	—
							receptor activity, transcription_regulat or,		
3590	TRAP150	NM_005119.1	2062	ggctagccctcagaaactgttg	103037	637936	—	—	—
3591	TRAP150	NM_005119.1	2151	tacatgaacgctttactaaatac	103039	637941	see also 3590 line		
							receptor activity, transcription_regulat or,	transcription co-activator	—
3592	TNRC11	NM_005120.1	1357	cccatgccagagggaatacagtc	112582	469273	—	—	—
3593	TNRC11	NM_005120.1	2398	cagcgggtgctactgtttgg	112607	469302	see also 3592 line		
3594	TNRC11	NM_005120.1	2770	atctgcacctcgaatattc	112610	469305	see also 3592 line		
3595	TNRC11	NM_005120.1	3051	ctgtatctgtgtatctctatg	112615	469314	see also 3592 line		
3596	TNRC11	NM_005120.1	3380	cagagctgaccggctattgcaag	112621	469326	see also 3592 line		

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3597	TNRC11	NM_005120.1	4296	ggcacaatcagggttttccaac	112633	469351	see also 3592 line	
3598	TNRC11	NM_005120.1	4856	cagccaggtgcaccagattgtga	112635	469356	see also 3592 line	
3599	TNRC11	NM_005120.1	5141	ctggcttcgattccatcttcaag	112645	469369	see also 3592 line	
3600	TNRC11	NM_005120.1	5142	tggcttcgattccatcttcaaga	112646	469370	see also 3592 line	
3601	NUP153	NM_005124.2	323	cagggtacagaatcttgttaaga	34215	510679	transporter	-
3602	NUP153	NM_005124.2	353	gccagggtggatcaaaagatact	34216	510681	see also 3601 line	
3603	NUP153	NM_005124.2	1219	ttgtatagggtgggatagatctc	34250	510696	see also 3601 line	
3604	NUP153	NM_005124.2	2458	gtgtgaagcggcccttactatg	34296	510734	see also 3601 line	
3605	NUP153	NM_005124.2	2463	aagcagcccttactatgacagt	34297	510735	see also 3601 line	
3606	THOC1	NM_005131.1	225	aacgttttagctattttctct	292491	682497	-	-
3607	THOC1	NM_005131.1	760	tgcaatgctatgagaagattcca	292511	682525	see also 3606 line	
3608	THOC1	NM_005131.1	1067	ttgattgaagatactacaaaat	292517	682535	see also 3606 line	
3609	THOC1	NM_005131.1	1140	aagatggtagagatatataaa	292518	682537	see also 3606 line	
3610	THOC1	NM_005131.1	1517	acggagaagccctactcttctc	292523	682548	see also 3606 line	
3611	SLC12A6	NM_005135.1	1752	actacctggcttacttcttaa	256911	640798	cell_cycle	-
3612	DGCR2	NM_005137.1	1021	tggatgaaggttctacttcacc	174555	568444	receptor	-
3613	GIF	NM_005142.2	588	gacctgtatgatacaacagatcc	180607	573917	binding	pernicious anemia(悪性貧血)
3614	TBX19	NM_005149.1	1016	ctgacagctggacttcttctatcc	12738	449117	transcription_regulator	RNA polymerase II
3615	USP10	NM_005153.1	1352	accccgatggctgatacaataaag	188769	582799	ubiquitin C-	adrenocorticotrophic hormone deficiency(副腎皮質刺激ホルモン欠損症)
3616	USP10	NM_005153.1	1353	ccccgtggctgatacaataaag	188770	582800	terminal hydrolase	-
3617	USP8	NM_005154.1	348	ctctacctcagttcttactaaa	190384	452437	ubiquitin-specific	-
3618	USP8	NM_005154.1	552	ttcaagcaacagcaggattattt	190399	452445	protease	-
3619	USP8	NM_005154.1	2939	agcttacttactgacttctgaact	190435	452486	see also 3617 line	
3620	USP8	NM_005154.1	2824	cctgtggacagcagcagataga	190439	452490	see also 3617 line	
3621	USP8	NM_005154.1	3184	tagcatcacaagtaaatgtaca	190457	452497	see also 3617 line	
3622	PPT2	NM_005155.5	1344	gggattcttttgggttgaagact	200261	592089	-	-
3623	ROD1	NM_005156.3	922	caccagccttaagtgaatatata	54378	486037	-	-
3624	ROD1	NM_005156.3	1263	cacatgggctttttactctattt	54384	486045	see also 3623 line	
3625	ROD1	NM_005156.3	1299	atgtacatcagtgaggaagtatg	54385	486047	see also 3623 line	
3626	ACTC	NM_005159.2	1000	ccccctgagcgtgaataactctgt	286217	659061	translation	cardiomyopathy(アルコーン性心筋症)
3627	ADRBK2	NM_005160.2	226	ttgacaagattttcaatcagaaa	71776	792555	kinase_related, gpcr,	G-protein coupled receptor kinase
3628	ABCD2	NM_005164.2	640	ctgcggcatatgctctgaaaacc	70795	492580	-	ATP-binding cassette (ABC) transporter
3629	ABCD2	NM_005164.2	973	agcctcgactttcatcatcaaa	70811	492588	see also 3628 line	
3630	ABCD2	NM_005164.2	976	ctcgactttcatcatcaaaata	70813	492589	see also 3628 line	
3631	ABCD2	NM_005164.2	1571	gtgtacatcatgatagaacagt	70834	492614	see also 3628 line	
3632	ABCD2	NM_005164.2	1769	aaggtatgtcttctacaaaag	70842	492621	see also 3628 line	
3633	APLP1	NM_005166.2	1025	agcgtagatgcgccagattaat	177429	570593	apoptosis	-
3634	APLP1	NM_005166.2	1026	gcgtaggatgcgccagattaatg	177430	570594	see also 3633 line	

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3635	MGC19531	NM_005167.4	1831	ccggctgggctactacaaaagatc	236821	531029	-	-	breast cancer(乳癌)、pancreatic cancer(膵臓癌)、melanoma(メラノーマ)
3636	MGC19531	NM_005167.4	1832	cggtggccctacaaaagatgc	236822	531030	see also 3635 line	-	
3637	ARHE	NM_005168.2	179	atctatcatggtactactaatcaga	108344	518665	-	Rho small monomeric	-
3638	ARHE	NM_005168.2	190	atctaatcagaacgtgaatgc	108345	518666	see also 3637 line	-	
3639	ARHE	NM_005168.2	664	tcgaatgctcagctttacagtcg	108360	518674	see also 3637 line	-	
3640	ARHE	NM_005168.2	823	cagttgctacggacttaacgaag	108365	518680	see also 3637 line	-	
3641	ATP6V0A1	NM_005177.2	338	atgtgaagaatggatcgaaagc	266206	653528	-	hydrogen-transporting two-sector ATPase	-
3642	ATP6V0A1	NM_005177.2	1471	atgagaatgagatgtttgacact	266229	653556	see also 3641 line	-	
3643	CACNA1F	NM_005183.1	4418	gaggatctggtctgaatgacc	138791	545055	channel	voltage-gated calcium channel	night blindness(夜盲症)
3644	CBL	NM_005188.1	831	ttgatctgacctgcaatgattat	2084	533219	transcription_regulat or、	transcription factor	Jacobsen syndrome(Jacobsen症候群)
3645	CBL	NM_005188.1	834	atctgacctgcaatgattatatt	2085	533220	see also 3644 line	-	
3646	CBL	NM_005188.1	1160	ttgttctctgtagcgaataatca	2072	533229	see also 3644 line	-	
3647	CBL	NM_005188.1	1720	tggctcccttcataaagacaaac	2085	533242	see also 3644 line	-	
3648	CCNC	NM_005190.2	230	atccaagcattagtggaacatct	300218	668668	cell cycle、transcription_regulat or	cyclin-dependent protein kinase、regulator	-
3649	CCNC	NM_005190.2	367	ggcatcaaaagtagaggaatttg	300222	668677	see also 3648 line	-	
3650	CCNC	NM_005190.2	529	ttgttctttagtagtataatc	300226	668679	see also 3648 line	-	
3651	CCNC	NM_005190.2	536	ttgatagtgatataatccttag	300227	668680	see also 3648 line	-	
3652	CCNC	NM_005190.2	619	gaggatagtgatgatacctaca	300229	668681	see also 3648 line	-	
3653	CEBPB	NM_005194.2	1167	cagcaccctcggaactgttca	2154	457011	transcription_regulat or	translation regulator	-
3654	CEBPB	NM_005194.2	1170	cacctcggaactgttcaagc	2155	457012	see also 3653 line	-	
3655	COL13A1	NM_005203.3	817	aactgctgacgagaatggaag	333572	696105	-	-	-
3656	CRK	NM_005206.2	688	gcctcagtatcggtctctgattgg	252589	533914	transcription_regulat or	-	-
3657	CRK	NM_005206.2	723	tggtaaggttacgaagattaat	252593	533915	see also 3656 line	-	-
3658	CRK	NM_005206.2	729	aggttacgaagattaatgtgagt	252594	533916	see also 3656 line	-	-
3659	CRYBA1	NM_005208.3	214	aagtggcgctggtgattgtatg	289522	659911	-	structural constituent of eye lens	-
3660	CRYBA1	NM_005208.3	217	tggcgctggtgattgtatgagc	289523	659912	see also 3659 line	-	-
3661	CSF1R	NM_005211.2	2687	ctgagctaggagacatcatgaatga	77610	498854	receptor activity、signal transduction、kinase related	hematopoietic-associated factor 1A complex	anemia macrocytic(溶血性貧血)、diabetes(糖尿病)、arthritis(関節炎)
3662	DLX3	NM_005220.2	464	tactcgcccaagtcggaatatac	2685	442992	transcription_regulat or	transcription factor	tricho-dento-osseous syndrome(毛髮歯骨症候群)

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3663	EDG3	NM_005226.2	1388	cgctgagcccaagcagaagtaaa	173423	501260	-	lysosphingolipid and lysophosphatidic	-
3664	EFNA4	NM_005227.2	462	acctggagagacttactactaca	206035	694588	receptor activity	-	-
3665	EFNA4	NM_005227.2	465	tggagagacttactactactct	206036	694590	see also 3664 line	-	-
3666	EFNA4	NM_005227.2	467	gagagacttactactactctcg	206037	694591	see also 3664 line	-	-
3667	ELK1	NM_005229.2	419	ggccttgccgtactactatgaca	3142	443353	transcription_regulat or	translation regulator	soft tissue sarcoma(軟部組織肉腫)、bladder cancer(膀胱癌)、synovial sarcoma(滑膜肉腫)
3668	EPHA1	NM_005232.2	264	tgggacacccctgtacatgtacc	81316	501537	receptor_activity、 kinase related、	ephrin receptor	non-small-cell lung cancer(非小細胞肺癌)
3669	EPHA1	NM_005232.2	320	accactggcttcgctccaattgg	81317	501538	signal transduction	-	-
3670	EPHA1	NM_005232.2	324	ctggcttcgctccaattggatct	81318	501539	see also 3668 line	-	-
3671	ERCC4	NM_005236.1	363	tagaataccctcagatttaatta	26080	484345	-	endodeoxyribonuclease	xeroderma pigmentosum(色素性乾皮症)
3672	ETS1	NM_005238.1	302	gccgactctcaccatcatcaaga	3515	443803	transcription_regulat or	C-ets-1 protein molecular_function	chondrosarcoma(軟骨肉腫)
3673	EV1	NM_005241.1	839	aggctcgccataaatctctact	26202	696462	-	-	leukemia(白血病)
3674	EV1	NM_005241.1	843	ctggcataaatctctactcagt	26203	696463	see also 3673 line	-	-
3675	EV1	NM_005241.1	943	ttcagcactacgtcttccttaaa	26204	696464	see also 3673 line	-	-
3676	EV1	NM_005241.1	945	cagcactacgtcttccttaaa	26205	696465	see also 3673 line	-	-
3677	EV1	NM_005241.1	948	cactacgtcttccttaaaataac	26207	696466	see also 3673 line	-	-
3678	EV1	NM_005241.1	1063	agctcagtggttaataagrtca	26210	696469	see also 3673 line	-	-
3679	EV1	NM_005241.1	1201	taccacggcctccttggatcc	26211	696472	see also 3673 line	-	-
3680	EV1	NM_005241.1	1668	aggagctgtaagtattctataa	26219	696492	see also 3673 line	-	-
3681	EV1	NM_005241.1	2507	acctaacacggcacttgagaacc	26240	696508	see also 3673 line	-	-
3682	EWSR1	NM_005243.1	531	tagtatatggacagagtaactac	51493	473769	transcription_regulat or	-	extraskelatal myxoid chondrosarcoma(骨外性粘液性軟骨肉腫)、desmoplastic small round cell tumor(纖維形成性円形細胞腫瘍)、extraskelatal myxoid chondrosarcoma(骨外性粘液性軟骨肉腫)、chondrosarcoma(軟骨肉腫)、sarcoma(肉腫)、maxillary tumor(上顎癌)、paraspinal neurogenic tumor(傍脊椎神経性腫瘍)、clear cell sarcoma(明細胞肉腫)、Ewing sarcoma(ユーズン肉腫)、lipomatous tumors(脂肪腫性腫瘍)、Askini tumor (esthesioneuroblastoma)(鼻腔神経芽細胞腫)、myxoid liposarcoma(粘液性脂肪肉腫)、Ewing's sarcoma(ユーズン肉腫)、clear cell sarcoma of the soft tissue(軟組織明細胞肉腫)、malignant melanoma(悪性黒色腫)、Ewing's tumours(ユーズン腫瘍)
3683	EWSR1	NM_005243.1	532	aggatatggacagagtaactaca	51494	473770	see also 3682 line	-	-
3684	EWSR1	NM_005243.1	710	cagagtagctatggtccaacaag	51497	473773	see also 3682 line	-	-

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3685	EWSR1	NM_005243.1	857	cccgatgacgagctgtttatgg	51500	473776	see also 3682 line		
3686	FER	NM_005246.1	2228	atgatcatcccaatattgtcaaa	82179	502228	kinase_related	protein tyrosine kinase	-
3687	FER	NM_005246.1	2271	aagacagcctgtctacatcatta	82180	502230	see also 3686 line		
3688	FER	NM_005246.1	2660	gtcgtacccctggaatgacaaat	82190	502237	see also 3686 line		
3689	FER	NM_005246.1	2661	tccgtacctggaatgacaaatc	82191	502238	see also 3686 line		
3690	FOXG1B	NM_005249.3	1431	cggcgccagaccagtaacttttc	4047	443972	transcription_regulat	transcription factor	-
3691	FOXG1B	NM_005249.3	1460	gtcccgaccgcgtcaatgacttc	4050	443973	or		
3692	FOXG1B	NM_005249.3	1461	tcccgaccgcgtcaatgacttcg	4051	443974	see also 3690 line		
3693	FOXG1B	NM_005249.3	1550	ctgcccctgtgagctcttaagacc	4053	443975	see also 3690 line		
3694	FOXG1B	NM_005249.3	1603	tggaggactgtctgattatttca	4056	443976	see also 3690 line		
3695	FOXG1B	NM_005249.3	1605	ggggactgtctgattatttca	4057	443977	see also 3690 line		
3696	FOXG1B	NM_005249.3	1645	ttctccaacccttaataacatt	4058	443978	see also 3690 line		
3697	FOSL2	NM_005253.2	870	cagattatcccggaacttga	3998	459550	transcription factor		-
3698	GAS2	NM_005256.2	185	ttgtgttaaccacaaatctattagg	306253	674272	cell_cycle,		-
3699	GATA6	NM_005257.3	1556	cagaagcgcgtgccttcacacg	4437	444368	transcription_regulat	translation regulator	-
3700	GDF8	NM_005259.1	671	atgaagacggtacacagggtatc	168624	565594	signal_transduction	growth factor	-
3701	GFR1	NM_005264.2	1834	agccacataaccacacaaatcaat	248779	634986	receptor_activity,		-
3702	GPM6A	NM_005277.2	250	ctggagacacactggatgtttt	325843	692320	signal_transduction		-
3703	GPM6B	NM_005278.2	434	aactgcacgggtgagtttaaaaca	280417	692352	-	molecular_function	unknown
3704	GPR12	NM_005288.1	673	atgaggcacgcccacatcagatagc	239407	696790	gpcr,	rhodopsin-like receptor	-
3705	GPR22	NM_005295.1	217	atcaactctgtcagtaacattat	239652	624708	receptor_activity,		-
3706	GPR22	NM_005295.1	224	ctgtcagtaacacattattacaatg	239653	624709	signal_transduction	rhodopsin-like receptor	-
3707	GPR22	NM_005295.1	1018	ggcccaagtgcaccttttagtaaa	239679	624737	gpcr,		-
3708	GPR22	NM_005295.1	1019	ggcccaagtgcaccttttagtaaa	239680	624738	receptor_activity,		-
3709	GPR22	NM_005295.1	1020	cccaagtgcaccttttagtaaat	239681	624739	signal_transduction		-
3710	GPR23	NM_005296.1	164	ttgatgattcctccaagtataat	239690	624756	gpcr,	purinergic nucleotide receptor, G-protein coupled	-
3711	GPR34	NM_005300.2	530	aagtggacacactagggtgtgattct	239763	624833	gpcr,	purinergic nucleotide receptor, G-protein coupled	-

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3712	GPR37	NM_005302.2	1650	ctgcaagatgctgcccctatatag	239811	624886	gpcr, receptor activity, signal transduction	rhodopsin-like receptor	Parkinson disease(パーキンソン病)
3713	HAS2	NM_005328.1	862	aacctaccctgggattaaagt	213525	601885	-	transferring	
3714	HAS2	NM_005328.1	1810	ctgccttagaggaaatctgca	213553	601913	see also 3713 line	glycosyl groups	lipoblastoma(脂肪芽細胞腫)
3715	HAS2	NM_005328.1	2172	atgacatggtgcttgatgatga	213572	601929	see also 3713 line		
3716	HCFC1	NM_005334.1	262	ttgggggtctgcccgaatgatgc	4597	696909	transcription_regulat	transcription factor	
3717	HDLP	NM_005336.1	444	aaggtgaacaaagcaaaatctgc	51902	484484	-	lipid transporter	atherosclerosis(粥状硬化症)
3718	HDLP	NM_005336.1	1307	cagaacctggccaaaatcaactca	51925	484510	see also 3717 line		
3719	HDLP	NM_005336.1	1531	cagaatcaagagaccagtcacaagg	51930	484516	see also 3717 line		
3720	HDLP	NM_005336.1	1702	aagatttcacgcacacatcattg	51938	484524	see also 3717 line		
3721	HDLP	NM_005336.1	1883	ctgtggaataatagctattcaat	51946	484534	see also 3717 line		
3722	HDLP	NM_005336.1	1919	ttcaaacaggttccacaagaatat	51949	484537	see also 3717 line		
3723	HDLP	NM_005336.1	1946	gggaagagagcgcaaacattaa	51951	484540	see also 3717 line		
3724	HEM1	NM_005337.2	767	gccatgattaacctcgtctaattc	325695	769653	-	-	-
3725	HEM1	NM_005337.2	770	atgattaacctcgtctaattcaga	325696	769654	see also 3724 line		
3726	HEM1	NM_005337.2	793	tacaatggcctggtgagtatctgt	325698	769656	see also 3724 line		
3727	HIP1	NM_005338.4	839	tacaaagttgaagaatctgtttct	117491	523171	-	structural constituent of cytoskeleton	-
3728	HIP2	NM_005339.3	284	tcccctaaggtccggtttatca	229817	616450	transcription_regulat	-	-
3729	HIP2	NM_005339.3	333	tcggtcacagggctatttgttt	229821	616452	see also 3728 line		
3730	HIP2	NM_005339.3	341	agggtctattgttggatatcc	229822	616453	see also 3728 line		
3731	HIP2	NM_005339.3	394	tccgcacggtatttgttcattg	229828	616458	see also 3728 line		
3732	HSPA5	NM_005347.2	939	ggcccaactaaggagatactatc	85228	503934	-	Hsp70/Hsp90 organizing protein	-
3733	HSPA5	NM_005347.2	1299	gactcgaattccaaagattcagc	85237	503944	see also 3732 line		
3734	RBP5UH	NM_005349.1	106	tagggaagctatcgcaaaatttt	37901	465644	transcription_regulat	-	-
3735	RBP5UH	NM_005349.1	111	aagctatcgaaattttttaaa	37902	465647	see also 3734 line		
3736	MADH4	NM_005359.3	450	accatacagagaacattggtatgg	6272	461328	transcription_regulat	Smad3/Smad4 complex	colorectal cancer(大腸癌)、pancreatic carcinoma(膵癌)、lung cancer(肺癌)、pancreatic cancer(膵臓癌)、polyposis(ポリポーシス症)、colorectal cancers(結腸直腸癌)
3737	MADH4	NM_005359.3	575	ttgtcagtatcggttgacttaa	6276	461331	see also 3736 line		
3738	MADH4	NM_005359.3	577	gtcagtatcggttgacttaaaa	6277	461332	see also 3736 line		
3739	MADH4	NM_005359.3	611	ctgtgtgaatccatcatcactacg	6278	461334	see also 3736 line		
3740	MADH4	NM_005359.3	1000	agccagctacttaccatcataac	6288	461346	see also 3736 line		
3741	MADH4	NM_005359.3	1439	tagtgacacagcggtttgtac	6299	461350	see also 3736 line		

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3742	MCF2	NM_005369.2	347	ttgttatgctgagctcagttagt	296075	664673	-	guanylnucleotide release factor	-
3743	MPL	NM_005373.1	364	ctgcacctctgggtgaagaatgt	244198	445935	receptor, activity, signal transduction	translation regulator	megakaryocytic thrombocytopenia (巨核球血小 板減少症)、leukemia (白血病)
3744	MPL	NM_005373.1	1917	ttctactactaccactaagctatt	244211	445948	see also 3743 line		
3745	MPL	NM_005373.1	1918	ttctactactaccactaagctattg	244212	445949	see also 3743 line		
3746	NKTR	NM_005385.2	270	ttctcagacatatgtccaaaac	177278	619087	-	peptidyl-prolyl cis- trans isomerase	-
3747	NKTR	NM_005385.2	520	tggaaatcgaggagaaacatacc	177285	619094	see also 3746 line		
3748	NKTR	NM_005385.2	1409	atcatgtctctataatgcatatt	177307	619120	see also 3746 line		
3749	NKTR	NM_005385.2	4004	tcggcctgggtctctctttgatg	177370	619178	see also 3746 line		
3750	NKTR	NM_005385.2	4231	atcgatcaagaagctactactaga	177379	619184	see also 3746 line		
3751	NNAT	NM_005386.2	224	tggtaggattcgcttttcgaaa	272957	685409	-	-	-
3752	NNAT	NM_005386.2	225	ggtaggattcgcttttcgaaat	272958	685410	see also 3751 line		chronic myeloid leukemia (慢性骨髓性白血病)、 leukemia (白血病)
3753	NUP98	NM_005387.3	700	aagctggaggttagcactaata	269558	712596	-	-	
3754	NUP98	NM_005387.3	900	agctctccacactaattcagg	269562	712598	see also 3753 line		
3755	NUP98	NM_005387.3	2358	gggtgaagggtcctaaatagggaag	269606	712644	see also 3753 line		
3756	NUP98	NM_005387.3	3569	cccaactggactcttctgaata	269642	712671	see also 3753 line		
3757	NUP98	NM_005387.3	3570	cccaactggactcttctgaatag	269643	712672	see also 3753 line		
3758	NUP98	NM_005387.3	3665	gcccaatccagtagctgttaaac	269644	712679	see also 3753 line		
3759	PDCL	NM_005388.2	342	cccaaaaggtgtgatcaatgact	253464	649532	gpcr, signal transduction	regulator of G- protein signaling	-
3760	PKD3	NM_005391.1	471	ttctggatgggtttttataccaac	96165	511638	kinase related, signal transduction	pyruvate dehydrogenase (lipoamide) kinase	-
3761	PKD3	NM_005391.1	915	atcgtcttttaactacatgtat	96184	511656	see also 3760 line		
3762	PKD3	NM_005391.1	1146	ccgcatggcgccattacaagacc	96190	511663	see also 3760 line		
3763	PHF2	NM_005392.2	1518	aagatgcccaagccatccaaaat	9249	463559	transcription regulat or	-	-
3764	PHF2	NM_005392.2	2129	aaggactgtctctcttctgttg	9254	463569	see also 3763 line		
3765	PHF2	NM_005392.2	3232	ccgctgccaaaggaaaacgtacg	9262	463577	see also 3763 line		
3766	PNLIPRP2	NM_005396.3	161	cccgcttctctgtacacaaaat	199773	591521	-	triacylglycerol lipase	-
3767	PTPN14	NM_005401.3	605	gaggccacaagatatcagttat	193429	586790	phosphatase	structural molecule	-
3768	PTPN14	NM_005401.3	620	cagttattactcgaagtcacaaaa	193431	586792	see also 3767 line		
3769	PTPN14	NM_005401.3	2340	ctcagatcacccacagaagacc	193462	586826	see also 3767 line		
3770	RALA	NM_005402.2	525	cgctgcaattagagacaactact	110444	520193	signal transduction	protein binding	-
3771	RALA	NM_005402.2	527	ctgcaattagagacaactacttc	110445	520194	see also 3770 line		
3772	ROCK1	NM_005406.1	3	gtcgaactggggacagttttgaga	99205	513525	kinase related, apoptosis, signal transduction	-	-
3773	ROCK1	NM_005406.1	529	ttctatactcagaagaagtattct	99215	513537	see also 3772 line		
3774	ROCK1	NM_005406.1	551	ttgcatttgatgcaatcattcc	99216	513538	see also 3772 line		



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3775	ROCK1	NM_005406.1	1652	atgaacttacttaggacagaatcg	99236	513545	see also 3772 line		
3776	ROCK1	NM_005406.1	2808	caactttagtggcttgaagaag	99269	513573	see also 3772 line		
3777	ROCK1	NM_005406.1	3181	gacatgaacgcgaattgttaga	99276	513580	see also 3772 line		
3778	ROCK1	NM_005406.1	3188	aagcgcaattggtagaagaatgt	99277	513581	see also 3772 line		
3779	SIX3	NM_005413.1	430	gcgaacttcgcgcgatttcacc	11285	441336	transcription_factor	holoprosencephaly(全前脳症)	
3780	SIX3	NM_005413.1	743	gcgtgcgagccatcaacaaca	11286	441338	see also 3779 line		
3781	SLC20A1	NM_005415.3	555	ttctcgtggagagccaatgatgt	251489	637746	receptor_activity,		
3782	SLC20A1	NM_005415.3	565	gagcaaatgatgtagcaaatctt	251490	637749	kinase_related	-	
3783	SLC20A1	NM_005415.3	680	ggccaaagtggcgaaaccatcc	251491	637750	see also 3781 line		
3784	SLC20A1	NM_005415.3	796	aactcgtgcttcgttttgaag	251495	637757	see also 3781 line		
3785	SLC20A1	NM_005415.3	1099	cacgtgtgctggcctttgacaaa	251503	637768	see also 3781 line		
3786	ST5	NM_005418.2	2189	aggagcggagcgttttggatc	333771	740684	-	-	
3787	TECTA	NM_005422.1	444	atggaggaagtcacgttttatg	289092	614734	-	-	deafness(聾)
3788	TECTA	NM_005422.1	5661	caggagccgcacgacatcaatgg	289174	614816	see also 3787 line		
3789	TP73	NM_005427.1	1579	accccgctcgtcagtttttta	13473	449656	transcription_regulat		bladder cancer(膀胱癌)、lung cancer(肺癌)、neuroblastoma(神経芽細胞腫)
3790	VEGFC	NM_005429.2	1342	tggaccccaaaaagaaactagaca	169581	566298	translation_regulator		neuroblastoma(神経芽細胞腫)
3791	NGO4	NM_005437.1	244	tccgggctgaacagcaaatataa	112242	709117	growth_factor		neuroblastoma(神経芽細胞腫)
3792	RQCD1	NM_005444.1	455	aagaagtaatacaacttttttta	320588	679588	translation_regulat		thyroid cancer(甲状腺癌)
3793	CSPG6	NM_005445.2	375	aagttcaacttcgaagagttatt	77789	499056	-	-	
3794	CSPG6	NM_005445.2	400	tgccaaaaggatcagttttct	77791	499058	cell_cycle,		
3795	CSPG6	NM_005445.2	1227	agggtcagggaagccagtttaca	77817	499074	signal_transduction		
3796	CSPG6	NM_005445.2	1598	aaggccattttaaatggaataga	77825	499085	cell_cycle,		
3797	CSPG6	NM_005445.2	1930	gaggtaaatcccgatttgaca	77838	499101	signal_transduction		
3798	CSPG6	NM_005445.2	2206	aaggattaataatgaattgatc	77852	499110	see also 3793 line		
3799	CSPG6	NM_005445.2	2788	ggataggagcgttggaataata	77861	499126	see also 3793 line		
3800	ZNF297	NM_005453.3	1678	gcccgtgtgcaacaaaaaagttc	45056	470769	transcription_regulat		
3801	ZNF297	NM_005453.3	1679	cccctgtgcaacaaaaaagttca	45057	470770	or	-	
3802	HNRPD1	NM_005463.2	1011	agcaggatgcggttaaatgttt	19563	484581	see also 3800 line		
3803	HNRPD1	NM_005463.2	1710	atgattatactgggtataactat	19579	484594	-	-	
3804	AKT3	NM_005465.3	85	agcagtttaccattgtgaaga	71976	493669	see also 3802 line		
3805	AKT3	NM_005465.3	221	tacattatccctcaacaacttt	71980	493673	kinase_related,		
3806	AKT3	NM_005465.3	734	aagaccgtttgtttgttgatg	71989	493688	signal_transduction	-	
3807	AKT3	NM_005465.3	814	gaggacagcacacgtttctatgg	71992	493689	see also 3804 line		
3808	AKT3	NM_005465.3	1219	ctcttgataaaggatcccaataa	72003	493703	see also 3804 line		

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3809	MED6	NM_005486.1	376	cagactgggatcaggtatataaac	249953	728439	receptor activity, transcription_regulat	-	-
3810	KCNE3	NM_005472.2	452	gagtagtgacccctatcatgtgt	260986	644348	channel	voltage-gated potassium channel	-
3811	HDAC5	NM_005474.3	1001	gggaagcctcctcctctacaact	113647	525928	transcription_regulat	-	-
3812	HDAC5	NM_005474.3	3232	ctctgtaacgacagatgttttg	113661	525956	see also 3811 line	-	-
3813	PIGK	NM_005482.1	177	tacatccgattctgttttaatt	187808	581545	-	legumain	-
3814	ADPRTL2	NM_005484.2	1426	ttgcctctcgcctaaagaataca	21269	454581	-	-	-
3815	HMG2L1	NM_005487.2	1518	ctgaccatccagggtatagatttt	28549	460286	transcription_regulat	DNA binding	-
3816	HMG2L1	NM_005487.2	1533	tagattttgggaaccttagtaaa	28550	460288	see also 3815 line	-	-
3817	RANBP9	NM_005493.2	897	gtcattggcgtgtgtgttaatt	333865	709620	-	-	-
3818	RANBP9	NM_005493.2	945	aagaatggacatgttttaggtat	333867	709624	see also 3817 line	-	-
3819	RANBP9	NM_005493.2	982	taccgcgaattgtatctact	333869	709627	see also 3817 line	-	-
3820	RANBP9	NM_005493.2	1777	gagaaacttccatccatgtttc	333899	709649	see also 3817 line	-	-
3821	RANBP9	NM_005493.2	1784	ttcatccaatgtttcctaagt	333900	709650	see also 3817 line	-	-
3822	RANBP9	NM_005493.2	1811	ctctaaacatgaccacgaatgg	333901	709651	see also 3817 line	-	-
3823	RANBP9	NM_005493.2	1819	atgacacagaaatgggaattgt	333902	709652	see also 3817 line	-	-
3824	RANBP9	NM_005493.2	1821	gaccacgaatgggaattgtga	333903	709653	see also 3817 line	-	-
3825	RANBP9	NM_005493.2	2227	cagtggagagactactacattag	333915	709659	see also 3817 line	-	-
3826	SMC4L1	NM_005496.2	622	tggctatcgagcgacaaaataaa	333923	452554	cell cycle	-	-
3827	SMC4L1	NM_005496.2	1014	gacgctaaatgaacctattaaa	333943	452577	see also 3826 line	-	-
3828	SMC4L1	NM_005496.2	1044	gtcggagaggtgaatattaaat	333946	452580	see also 3826 line	-	-
3829	SMC4L1	NM_005496.2	1739	cagtoagaactgtatctatctct	333961	452594	see also 3826 line	-	-
3830	SMC4L1	NM_005496.2	1741	gtcagaactgtatctatctctca	333962	452595	see also 3826 line	-	-
3831	SMC4L1	NM_005496.2	1743	cagaacttgatctatctatcagt	333963	452596	see also 3826 line	-	-
3832	SMC4L1	NM_005496.2	2181	tagcccaagaatgtgaaccttc	333975	452608	see also 3826 line	-	-
3833	SMC4L1	NM_005496.2	3258	aagatgcacttagtatttaagt	334015	452644	see also 3826 line	-	-
3834	SMC4L1	NM_005496.2	3262	tgcacttagtatttaagtgaac	334016	452646	see also 3826 line	-	-
3835	SMC4L1	NM_005496.2	3979	ttctcttgaaataatattgttg	334030	452672	see also 3826 line	-	-
3836	GJA7	NM_005497.1	809	aggatccgggtgttataattat	263767	647341	-	connexon channel	-
3837	GJA7	NM_005497.1	815	cegggtgttataattatctcttc	263768	647343	see also 3836 line	-	-
3838	GJA7	NM_005497.1	854	ctgtcccccctgtgtataacatt	263769	647345	see also 3836 line	-	-
3839	UBA2	NM_005499.1	148	ctccacatgacctgattgac	235620	620532	kinase_related	-	-
3840	UBA2	NM_005499.1	149	tccacatcgacctgattgacct	235621	620533	see also 3839 line	-	-
3841	UBA2	NM_005499.1	774	atccagttaaactttttacaag	235653	620556	see also 3839 line	-	-
3842	ABCA1	NM_005502.2	588	gagttgtggaaccttaacaaa	67930	490541	-	sterol transporter	atherosclerosis(粥状硬化症), high density lipoprotein deficiency(無アルファリポタン血症)
3843	ABCA1	NM_005502.2	2224	ccggtcaatgccctcttcata	67961	490583	see also 3842 line	-	-
3844	ABCA1	NM_005502.2	6974	gccaaaggccaaagtgtatga	69038	490678	see also 3842 line	-	-
3845	APBA2	NM_005503.2	2422	aggagaccccgctgtacatctag	128951	650534	-	protein transporter	-

3846	BCAT1	NM_005504.3	707	acctcaacatggttagaagtat	217957	605905	cell_cycle	branched-chain amino acid aminotransferase	hyperleucine-isoleucinemia(高ロイシンイソロイシン血症)
3847	SCARB2	NM_005506.2	1644	caccaacataccctacatca	251182	637521	receptor_activity, gpqr,	receptor	-
3848	CCR4	NM_005508.2	232	tggttctggtctgtcttcaaat	124543	528339	signal_transduction	C-C chemokine receptor	-
3849	HMGCS2	NM_005518.1	176	tcocctctggccaaacagatact	216547	603785	-	hydroxymethylglutaryl-CoA synthase deficiency(ヒドロキシメチルグルタリルCoA合成酵素欠損症)	-
3850	HNRPH1	NM_005520.1	185	atggggctcaaggtatctgttc	49032	484598	-	hydroxymethylglutaryl-CoA synthase deficiency(HMG-CoA合成酵素2欠損症)	-
3851	HNRPH1	NM_005520.1	186	tggggctcaaggtatctgttc	49033	484599	see also 3850 line	poly(U) binding	-
3852	HNRPH1	NM_005520.1	189	ggctcaaggtattctttcatct	49034	484600	see also 3850 line	-	-
3853	HNRPH1	NM_005520.1	635	gagctgaagttagaactcattat	49036	484603	see also 3850 line	-	-
3854	TLX1	NM_005521.2	1312	cggctctacaacgtgaacatgg	13426	449577	transcription_regulat	transcription factor	lymphoma(リンパ腫)
3855	TLX1	NM_005521.2	1716	cocctggccaaaggcctcaaatg	13429	449581	see also 3854 line	-	-
3856	HOXA1	NM_005522.3	493	caccaccaccagggtatctgtg	5004	444667	transcription_regulat	-	-
3857	HOXA11	NM_005523.4	429	cagctctgtccaattttctatagc	5030	444694	transcription_regulat	transcription factor	-
3858	HOXA11	NM_005523.4	481	ggcttcgaccagtttttcgaga	5031	444696	see also 3857 line	-	-
3859	HOXA11	NM_005523.4	778	tggccaaaggcaccgcgaataagc	5032	444697	see also 3857 line	-	-
3860	HSD11B1	NM_005525.2	143	atggcctactactactattctgc	219961	607378	-	cortisone reductase deficiency(コルチゾン還元酵素欠損症)、obesity(肥満)	-
3861	ISLR	NM_005545.2	1383	gggctgtctatcagggtgacaacg	131936	704094	-	-	-
3862	KARS	NM_005548.1	778	ccgctctaagatcatcatata	62935	484767	-	nucleic acid binding	-
3863	KARS	NM_005548.1	837	ttgaactcccatgatgaacatc	62938	484770	see also 3862 line	-	-
3864	KARS	NM_005548.1	1061	tacatggcctatgcagactatca	62953	484775	see also 3862 line	-	-
3865	LAMA1	NM_005559.2	8788	cggatagcagctctctgtcaag	290873	537070	-	-	-
3866	LAMC2	NM_005562.1	2907	atgggcaatgccactttttatga	177607	570691	-	-	-
3867	LAMC2	NM_005562.1	2909	gggcaatgccactttttatgaag	177608	570692	see also 3866 line	-	epidermolysis bullosa(表皮水疱症)
3868	LAMC2	NM_005562.1	3628	tgcgcccaaggctgtactaatacc	177616	570698	see also 3866 line	-	-
3869	LMAN1	NM_005570.2	148	atgccggttctgagtaataatc	174906	694628	-	mannose binding lectin	coagulation factor(凝固因子)
3870	LMAN1	NM_005570.2	151	ggcgttctgagtaataatacagc	174907	694630	see also 3869 line	-	-
3871	LMAN1	NM_005570.2	663	atgataaataatgctttacacc	174922	694655	see also 3869 line	-	-
3872	LMAN1	NM_005570.2	1028	aggacagaatcgtattctcttg	174928	694659	see also 3869 line	-	-
3873	LMNB1	NM_005573.2	915	cagttagcagatgaactttact	291462	686471	-	structural molecule	-
3874	LMNB1	NM_005573.2	919	tagcagatgaactttacttaaa	291463	686472	see also 3873 line	-	-
3875	LMNB1	NM_005573.2	1793	tggagacacatcagtcagtata	291483	686488	see also 3873 line	-	-
3876	LMO2	NM_005574.2	1359	tgcgggtgaaagacaagtgat	310695	690247	-	-	leukemia(白血病)
3877	LNPEP	NM_005575.1	1295	taccacttaagaattggattt	157309	555171	-	zinc binding	-

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3878	LNPEP	NM_005575.1	1596	tagatgctgatttaaacatg	157318	555180	see also 3877 line		pulmonary chondroid hamartoma(肺過誤腫)、 lipomatous tumors(脂肪腫性腫瘍)
3879	LPP	NM_005578.1	1636	tactgagagccctgtacattaa	281521	649456	-	-	
3880	ALDH6A1	NM_005589.2	663	tgccatgaccccttggatgt	225312	611700	-	methylmalonate- semialdehyde dehydrogenase (acylating)	
3881	ALDH6A1	NM_005589.2	1043	agcgtgcatgctcttcaaca	225325	611711	see also 3880 line	-	
3882	MUSK	NM_005592.1	889	atgcatagtctaccaataagcatg	92160	508889	receptor activity, kinase related, signal transduction	-	
3883	NFIA	NM_005595.1	525	ctgcctccgacggcagataaag	7839	446634	transcription_regulat or	-	
3884	NFIA	NM_005595.1	584	aaggtattccgttgaaagtact	7842	446636	see also 3883 line	-	
3885	NFIA	NM_005595.1	1214	agcatcaccgacctgtcattaca	7855	446643	see also 3883 line	-	
3886	NFIB	NM_005596.1	279	gtcgtgcaattgcctactattg	7857	446646	transcription_regulat or	translation regulator	
3887	NFIB	NM_005596.1	313	aggctcgaataacgcaagtacttt	7859	446647	see also 3886 line	-	
3888	NFIB	NM_005596.1	314	ggctcgaataacgcaagtacttta	7860	446648	see also 3886 line	-	
3889	NFIB	NM_005596.1	316	ctcgaataacgcaagtactttaaa	7861	446649	see also 3886 line	-	
3890	NFIB	NM_005596.1	756	tactgtcagagcagaagattctgg	7873	446654	see also 3886 line	-	
3891	NFIB	NM_005596.1	765	gagcaagattctggacaatcagg	7874	446655	see also 3886 line	-	
3892	NIT1	NM_005600.1	324	tcctgctgaggcatttgacttc	203963	594354	-	-	
3893	PTK2	NM_005607.3	427	aagatagtgacagtcacaaagt	98452	512844	kinase related, signal transduction	-	
3894	PTK2	NM_005607.3	829	aagcgatttttctcgaagattt	98465	512861	see also 3893 line	-	
3895	PTK2	NM_005607.3	860	ctgtcaaggcccaaacactaaga	98467	512862	see also 3893 line	-	
3896	PTK2	NM_005607.3	1033	ctgcaatcgcccccagaagaagg	98476	512865	see also 3893 line	-	
3897	PYGM	NM_005609.1	3116	atgcaccatgaccgggttaaaagt	211655	600009	-	transferase, transferring glycosyl groups	McArdle disease(マックアードル病) endometrial cancer(子宮癌)、lung cancer(肺癌)、 neuroblastoma(神経芽細胞腫)、ocular melanoma(眼メラノーマ)
3898	RBL2	NM_005611.2	324	ttggttagcatgtgccttatatg	37637	465566	cell cycle, transcription_regulat or	protein binding	
3899	RBL2	NM_005611.2	2480	aagtgccattcaacagatttcc	37709	465619	see also 3898 line	-	
3900	REST	NM_005612.3	1414	atgggcctaaaccttaattgc	276093	702077	transcription_regulat or	-	
3901	SAH	NM_005622.1	557	ctgcgaacagggagacagtttaatt	237210	617532	-	-	
3902	SAH	NM_005622.1	558	tgcaaacagggagacagtttaatt	237211	617533	see also 3901 line	-	
3903	SGK	NM_005627.2	706	aacatcgtttatagagacttaaa	100303	514616	kinase related, apoptosis	protein serine/threonine kinase	
3904	SOS1	NM_005633.2	1971	agctgatcgatgatgctatagaga	40525	467848	signal transduction	guanyl-nucleotide release factor	gingival fibromatosis(歯茎線維腫)、diabetes(糖尿 病)

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3905	SOS1	NM_005633.2	2746	ttggcaaaactcaggctctattaa	40545	467868	see also 3904 line	
3906	SOS1	NM_005633.2	2748	ggcaaaactcaggctctattatc	40546	467870	see also 3904 line	
3907	SOS1	NM_005633.2	3111	tctgggtgttcctccatcaaac	40558	467880	see also 3904 line	
3908	SOS1	NM_005633.2	3661	aggacacctgatgtttctcaag	40570	467895	see also 3904 line	
3909	SYBL1	NM_005638.3	202	ggcgagattcgtgctaagatacc	271092	702489	transcription_regulat	protein transporter
3910	SYBL1	NM_005638.3	211	ctggctaagatacctctcgaata	271093	702490	see also 3909 line	
3911	SYBL1	NM_005638.3	212	tggctaagatacctctcgaata	271094	702491	see also 3909 line	
3912	SYBL1	NM_005638.3	644	atctgtctgagcagctgtgtatg	271110	702507	see also 3909 line	
3913	SYBL1	NM_005638.3	648	tgtctgagcagcagctgtgtatg	271111	702508	see also 3909 line	
3914	SYT1	NM_005639.1	1143	tgcctatggcgaagctctgttg	173134	657504	transporter	
3915	TA7	NM_005642.2	1702	tactggatgagctcaaaaag	112471	658067	transcription_regulat	TFIID complex
3916	TA7	NM_005643.2	437	ctgaacaccttatgaatgatcg	41486	468574	transcription_regulat	protein binding
3917	TA7	NM_005644.2	333	aggtattgacaaagaagaatta	41503	468585	transcription_regulat	protein binding
3918	TA7	NM_005644.2	567	aagaaatccgaccctcaaaaaa	41505	468590	see also 3917 line	
3919	TCF20	NM_005650.1	5547	gggctcccttgtaaaaaagcagc	41805	468847	transcription_regulat	
3920	TD02	NM_005651.1	281	atcataactcacaagcttatga	224360	610841	tryptophan 2, 3	alcoholism(アルコール依存症)
3921	TERF2	NM_005652.2	1566	aaccgaacagctgtgatgataa	20737	469024	cell cycle	dioxygenase
3922	TERF2	NM_005652.2	1567	accgaacagctgtgatgataa	20738	469025	see also 3921 line	DNA binding
3923	TERF2	NM_005652.2	1591	atcgctggcggaccatgaaaga	20739	469027	see also 3921 line	
3924	TP53BP1	NM_005657.1	302	atctcgacaccttctcaatctcc	20870	541638	transcription_regulat	translation regulator
3925	TP53BP1	NM_005657.1	2239	tgcaccttctctgactgaact	20915	541679	see also 3924 line	
3926	TP53BP1	NM_005657.1	4658	gtcatccaatggctactttact	20952	541714	see also 3924 line	
3927	TP53BP1	NM_005657.1	5600	tgtcgaaacccggaagacttcc	20971	541726	see also 3924 line	
3928	TP53BP1	NM_005657.1	5869	ctgtgaagcagcaccattcaagt	20979	541732	see also 3924 line	
3929	UFD1L	NM_005659.3	166	tgttagcagggccctaagacagg	190756	670825	ubiquitin-specific protease	catch 22 syndrome(-)
3930	EV15	NM_005665.2	672	agccttgagacagggtttatt	131157	696542		
3931	EV15	NM_005665.2	1786	cacagaaccagatacaatagtaac	131187	696567	see also 3930 line	
3932	RNF103	NM_005667.2	1545	cagtgagcgaagatgaagtag	319777	699481	see also 3932 line	
3933	RNF103	NM_005667.2	1823	tgcatacatacactactagaact	319785	699495	see also 3932 line	
3934	RNF103	NM_005667.2	1892	ccttcaggccatggatctatt	319788	699498	see also 3932 line	Alzheimer disease(アルツハイマー病)
3935	RNF103	NM_005667.2	2020	aagcagttgtgtgtctcataag	319796	699504	see also 3932 line	
3936	RNF103	NM_005667.2	2021	agcgatttgggtctcataagc	319797	699505	see also 3932 line	
3937	RNF103	NM_005667.2	2363	accttcaccaccgattgtctt	319809	699518	see also 3932 line	
3938	SIAT8D	NM_005668.3	623	tgtgtatgcatacactatgtgc	213075	600926		
3939	SIAT8D	NM_005668.3	1014	aagcagtgaggagggttaatgc	213082	600935	see also 3938 line	
3940	SIAT8D	NM_005668.3	1017	cacgtgagtgagggttaatgcatt	213083	600936	see also 3938 line	

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3941	SIAT8D	NM_005688.3	1020	gtgagtgaggtaaatgacattaat	213084	600938	see also 3938 line		
3942	D8S2298E	NM_005671.1	763	ctggagagacataaggaataactgt	320502	802421	-	-	
3943	RB10	NM_005676.3	896	ttcgcttcgtcgagtttagtca	53883	485658	-	-	
3944	RB10	NM_005676.3	898	cgccttcgtcgagtttagtcaact	53884	485659	see also 3943 line		
3945	ABCC5	NM_005688.1	835	cactgactggcggtgattgaattac	70502	492306	-	organic anion transporter	lung cancer(肺癌)
3946	ABCC5	NM_005688.1	1042	taggcacatgattataatgtaatt	70508	492308	see also 3945 line		
3947	ABCC5	NM_005688.1	2253	gacccctcagtcgcttagatgc	70527	492334	see also 3945 line		
3948	ABCC5	NM_005688.1	4162	gccactgtaagattcgtgatitaa	70572	492372	see also 3945 line		
3949	ABC86	NM_005689.1	2206	ctctggctgcacccgaatagatg	69844	492006	-	ATP-binding cassette (ABC) transporter	
3950	DNM1L	NM_005690.2	1226	gtggccttaacactatgaact	108805	519181	-	-	
3951	DNM1L	NM_005690.2	1882	cagcgagatgtgagattatga	108826	519199	see also 3950 line		
3952	DNM1L	NM_005690.2	1958	tgccaaagcgagtaatgcatttt	108832	519204	see also 3950 line		
3953	ABCC9	NM_005691.1	422	gggtaatggcctttattacaaaa	70649	492446	receptor activity	-	diabetes mellitus(糖尿病)、diabetes(糖尿病)
3954	ABCC9	NM_005691.1	2043	ggcgagtggttagctacattat	70700	492494	see also 3953 line		
3955	ABCC9	NM_005691.1	4535	atgcaggcctgttttagctttt	70772	492551	see also 3953 line		
3956	ABCF2	NM_005692.3	1029	tacgggtaattatgacgaagacg	71026	492804	-	-	
3957	ABCF2	NM_005692.3	1338	gccttgcaatcaacaataatctag	71033	492815	see also 3956 line		
3958	ABCF2	NM_005692.3	1489	gtcaagatagggttgatcaatca	71035	492820	see also 3956 line		
3959	NR1H3	NM_005693.1	1071	atgaatgagctgcaactcaatga	8249	447025	transcription_regulat or、	LXRalpha/RXRalpha	atherosclerosis(粥状硬化症)
3960	PDCD7	NM_005707.1	1387	caggcatgattgggagatcagatcc	334195	677351	apoptosis	-	
3961	GPC6	NM_005708.2	1759	gaccggctggtcacagacataaa	246424	633744	receptor activity	-	
3962	COL4A3B	NM_005713.1	527	ggcgagatcgtgggtagttttg	205528	596297	kinase related	-	
3963	COL4A3B	NM_005713.1	530	aggatcgtgggtagttttgaaa	205529	596298	see also 3962 line		
3964	COL4A3B	NM_005713.1	533	atcgtgggtagttttgaaaaat	205530	596299	see also 3962 line		
3965	COL4A3B	NM_005713.1	1179	aacacttctcattgattgaac	205549	596323	see also 3962 line		
3966	COL4A3B	NM_005713.1	1827	aactatagaaaaactttcattggtg	205558	596347	see also 3962 line		
3967	COL4A3B	NM_005713.1	1953	accagccttgactgaaatgacc	205564	596355	see also 3962 line		
3968	UST	NM_005715.1	529	caggcttactaaaaatgaacaaa	217824	796007	-	structural constituent of cytoskeleton	
3969	ARPC4	NM_005718.2	359	tgcgagcagagaactcttattac	286848	659218	-	-	
3970	TM4SF9	NM_005723.2	826	ctgatgattggaaacctaatatt	309537	675447	-	-	
3971	TM4SF8	NM_005724.4	568	cagcattcagaaaggtatataaga	309520	693457	-	-	
3972	TSPAN-2	NM_005725.2	50	gggctcgtgggtgcatcaagatcc	309554	691504	-	-	
3973	RAD50	NM_005732.2	511	aagacgaccatcattgaatgct	98687	513032	-	-	
3974	RAD50	NM_005732.2	513	gacgaccatcattgaatgcttaa	98688	513033	see also 3973 line		
3975	RAD50	NM_005732.2	2748	atgcctgacagatgttacaatta	98771	513092	see also 3973 line		
3976	KIF20A	NM_005733.1	2358	ttgtgatgacatcttaataaac	87329	505402	-	protein transporter	-
3977	HIPK3	NM_005734.2	1047	gtcgccagcatgattatcaaga	84854	503553	kinase related	-	
3978	HIPK3	NM_005734.2	2275	caggctgacctaccagaagaaa	84874	503586	see also 3977 line		

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3979	HIPK3	NM_005734.2	3258	tagtggtaccagtaataccattca	84905	503603	see also 3977 line				
3980	ACTR1A	NM_005736.2	100	gacaacggatccgggtgattaa	286293	659098	-		structural constituent of cytoskeleton	-	
3981	ACTR1A	NM_005736.2	103	aacggatccgggtgattaaagc	286294	659099	see also 3980 line				
3982	ZNF263	NM_005741.3	884	ctgtaaaggagaggcattatct	15185	450102	transcription_factor		transcription factor	-	
3983	ZNF263	NM_005741.3	1025	ggcatcaggatcctcgtagtaagg	15188	450105	see also 3982 line				
3984	ARIH1	NM_005744.2	720	agccacttcaattgggataaaga	125887	670735	-		ubiquitin-like-protein ligase	-	
3985	ARIH1	NM_005744.2	792	gagtgatcatgtaataatccaag	125888	670737	see also 3984 line				
3986	ARIH1	NM_005744.2	942	cagtgctgagtgataattaac	125895	670743	see also 3984 line				
3987	ARIH1	NM_005744.2	1459	atggatctgcctggtaactgt	125913	670761	see also 3984 line				
3988	ARIH1	NM_005744.2	1717	gtgtgccacactcactgtacact	125916	670765	see also 3984 line				
3989	ARIH1	NM_005744.2	1736	cacttatgtcttgcctttacc	125919	670766	see also 3984 line				
3990	ARIH1	NM_005744.2	1832	gggctaaccttgagcagagatttt	125921	670767	see also 3984 line				
3991	ARIH1	NM_005744.2	1833	ggctacottgaacagagattttc	125922	670768	see also 3984 line				
3992	ARIH1	NM_005744.2	1843	aacgagattttcccaagattct	125923	670769	see also 3984 line				
3993	ARIH1	NM_005744.2	1913	gagtcgacgaagggtttgttac	125926	670773	see also 3984 line				
3994	ARIH1	NM_005744.2	1916	tcgcaggaagggtttgttacagc	125927	670774	see also 3984 line				
3995	BCAP31	NM_005745.5	371	aagtgaaacctccagacaatcc	267935	650575	apoptosis		-		
3996	TOB1	NM_005749.2	881	aggtagtagtaccgaatgaatg	136824	526164	-		protein binding	-	
3997	GPR64	NM_005756.1	507	tggagtcctgtctctaagtgaat	243357	630846	gpcr, receptor activity, signal transduction			-	
3998	GPR64	NM_005756.1	2325	gactatataccagataactatg	243406	630905	see also 3997 line				
3999	GPR64	NM_005756.1	2459	tgtgaacgtcagcatgttcatt	243410	630909	see also 3997 line				
4000	GPR64	NM_005756.1	2488	ctggttcagctctgtcgaattaa	243412	630910	see also 3997 line				
4001	GPR64	NM_005756.1	2489	tgggtcagctctgtcgaattaaa	243413	630911	see also 3997 line				
4002	GPR64	NM_005756.1	2731	tggaggcagctatttctgttgg	243422	630922	see also 3997 line				
4003	GPR64	NM_005756.1	2790	aactgtactaattgttttaaaga	243424	630923	see also 3997 line				
4004	GPR64	NM_005756.1	2792	ctgtactaatggtttaagaag	243425	630924	see also 3997 line				
4005	GPR64	NM_005756.1	3083	agcggagaagcttaccattatt	243435	630935	see also 3997 line				
4006	MBNL2	NM_005757.3	1332	gagttccagcggagaaactgtgc	64057	484942	-		-		
4007	MBNL2	NM_005757.3	1422	accgttaaccgtttgttgatga	64058	484943	see also 4006 line				
4008	MBNL2	NM_005757.3	1428	accgtttgtatggattacataaa	64059	484944	see also 4006 line				
4009	MBNL2	NM_005757.3	1453	ggcgttgcatggaggagaaatgc	64060	484946	see also 4006 line				
4010	MBNL2	NM_005757.3	1874	ggccagccaatcagataattct	64067	484947	see also 4006 line				
4011	ABI-2	NM_005759.3	699	ctccagtggtaccacaattattac	21073	812048	kinase-related		-		
4012	ABI-2	NM_005759.3	704	gtggtaccaaatgattacgtacc	21075	812049	see also 4011 line				
4013	ABI-2	NM_005759.3	723	tacctagccaaccctgaatattg	21076	812050	see also 4011 line				
4014	ABI-2	NM_005759.3	724	acctagcccaaccctgaatattg	21077	812051	see also 4011 line				
4015	ABI-2	NM_005759.3	770	aggacagcttctgtaatacaag	21078	812052	see also 4011 line				
4016	ABI-2	NM_005759.3	995	ggggggtcgtgcctctatagacg	21083	812058	see also 4011 line				

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圖 46 (續七)

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4055	PRG4	NM_005807.1	157	gccacctgcaactgtgattataa	309268	711344	-	-	campodactyly(屈指症)、osteosarcoma(骨肉腫)
4056	PRKN	NM_005813.2	2590	atgtcacacagatactgttc	97478	512370	kinase_related	protein kinase C	-
4057	PRKN	NM_005813.2	3090	aactcgcattggagacgttaca	97488	512374	see also 4056 line	-	-
4058	PRKN	NM_005813.2	3094	cgcattggagaaagttacattac	97490	512375	see also 4056 line	-	-
4059	PRKN	NM_005813.2	3099	tgagaaagcttacattacacatg	97491	512376	see also 4056 line	-	-
4060	DSRIL1	NM_005822.1	258	taccaatcagagagagtaaggaaa	125609	679663	phosphatase	phosphatase 2B	-
4061	RASGRP2	NM_005825.2	547	cccgaagagacaactccaattcc	151868	552845	signal_transduction	-	-
4062	HNRPR	NM_005826.2	93	ggctaatacagtggaatggaatg	52137	484660	-	RNA binding	-
4063	HNRPR	NM_005826.2	107	atgtaatacgggtacagtaaaaa	52138	484661	see also 4062 line	-	-
4064	HNRPR	NM_005826.2	108	tggttaatacgggtacagtaaaaa	52139	484662	see also 4062 line	-	-
4065	HNRPR	NM_005826.2	241	cagacagagattggtatgtatgt	52143	484664	see also 4062 line	-	-
4066	HNRPR	NM_005826.2	243	gacaggaatggtagcttatgtcg	52144	484665	see also 4062 line	-	-
4067	SRRM1	NM_005839.1	1251	cagcagtcacaacgcacaaagaaa	47361	471407	-	-	-
4068	SRRM1	NM_005839.1	1252	agcagtcacaacgcacaaagaaa	47362	471408	see also 4067 line	-	-
4069	IRX5	NM_005853.2	913	agcctcagcagcactcggatttaa	5545	445071	transcription_regulat	transcription factor	-
4070	IRX5	NM_005853.2	914	gcctcagcagcactcggatttaa	5546	445072	see also 4069 line	-	-
4071	IRX5	NM_005853.2	918	cagcagcactcggatttaaaggagc	5547	445073	see also 4069 line	-	-
4072	ZMPSTE24	NM_005857.2	1000	ttgttgcaactctactagaaga	184945	579209	-	metalloexopeptidas	-
4073	AKAP8	NM_005858.2	139	ggccagctggcaagagttatgaaa	21283	606865	kinase_related,	protein kinase A	-
4074	STAG1	NM_005862.1	420	caggttaacagagattcaactaat	307870	673796	signal_transduction	anchor protein	-
4075	STAG1	NM_005862.1	740	gacatcgcaactcttgatttaaat	307879	673808	cell_cycle	-	-
4076	STAG1	NM_005862.1	1047	gagcttttaggcatacaagatacc	307890	673825	see also 4074 line	-	-
4077	STAG1	NM_005862.1	1520	ttaagagatcgcatgtatcaaat	307901	673836	see also 4074 line	-	-
4078	STAG1	NM_005862.1	1966	gagtgctcttatagagctaattg	307914	673849	see also 4074 line	-	-
4079	STAG1	NM_005862.1	2394	ttgtagatcgattcaatcattct	307929	673861	see also 4074 line	-	-
4080	STAG1	NM_005862.1	2668	tccttcaaaagagagattgttag	307938	673875	see also 4074 line	-	-
4081	STAG1	NM_005862.1	3851	cagatgcagatctcttggtagg	307964	673912	see also 4074 line	-	-
4082	STAG1	NM_005862.1	3866	tggttaggcagccaggaagttaga	307965	673913	see also 4074 line	-	-
4083	STAG1	NM_005862.1	4103	gagctaaggccagcactcttttga	307974	673917	see also 4074 line	-	-
4084	STAG1	NM_005862.1	4131	cagctatcatagaagatgattca	307976	673919	see also 4074 line	-	-
4085	SAP18	NM_005870.3	79	ggcggttaccagagagagaaatta	113297	669304	transcription_regulat	transcription co-repressor	-
4086	SMNDC1	NM_005871.2	766	ggcccggttaagagagagatttt	47293	478679	or	repressor	-
4087	APEG1	NM_005876.3	2799	gtggcgatcgctggtttctacact	308368	493932	apoptosis	-	-
4088	DNAJA2	NM_005880.2	350	atggcaatacagagtagaagctcg	299307	668393	-	chaperone	-
4089	DNAJA2	NM_005880.2	924	gacgtcagattgtgtgaaataac	299325	668411	-	-	-
4090	DNAJA2	NM_005880.2	1007	cagttatgtaatcccttgaataa	299330	668416	see also 4088 line	-	-
4091	DNAJA2	NM_005880.2	1212	ggcgtgaagcactaatgatagc	299338	668424	see also 4088 line	-	-
4092	BCKDK	NM_005881.1	1135	caactagacactccctacaatgt	73978	496014	kinase_related,	two-component sensor molecule	-

4093	TEB4	NM_005885.2	581	tgcgtcaacggaaattgttg	334366	776403	-	-	-	
4094	TEB4	NM_005885.2	1019	gacttgatgatactgtttt	334376	776410	see also 4093 line			
4095	TEB4	NM_005885.2	1211	tagcaataaacactgataattgt	334383	776419	see also 4093 line			
4096	TEB4	NM_005885.2	1668	ttgcttccatacgtataatta	334397	776434	see also 4093 line			
4097	TEB4	NM_005885.2	1669	ttgcttccatacgtataatta	334398	776435	see also 4093 line			
4098	GOLGA3	NM_005895.2	1119	ttgatctgagctcatgttaaac	273658	535635	-	-	-	
4099	IDH1	NM_005896.2	290	cacgaatcatttgggaattgatt	220238	607499	-	isocitrate dehydrogenase (NADP+)	-	
4100	IDH1	NM_005896.2	644	atcaatacagcagcaactgattt	220254	607507	see also 4099 line			
4101	IDH1	NM_005896.2	651	cagagcaactgatttggtttc	220255	607508	see also 4099 line			
4102	IDH1	NM_005896.2	680	ctggaaaagtagagataaacctac	220256	607509	see also 4099 line			
4103	IDH1	NM_005896.2	1355	aggactggctgcttgcattaaa	220267	607525	see also 4099 line			
4104	M11S1	NM_005898.2	1340	cactgtatcctgccattgtatct	325779	706543	-	-	-	
4105	M11S1	NM_005898.2	1736	tgcaaacgggtgttcaatatgaat	325793	706554	see also 4104 line			
4106	M11S1	NM_005898.2	2192	atggatatcagcagcaattccaag	325806	706563	see also 4104 line			
4107	M11S1	NM_005898.2	2282	gaggatgcgcgcaaatgaacact	325808	706565	see also 4104 line			
4108	M11S1	NM_005898.2	2296	atgaacactcagcaagtgaatta	325809	706566	see also 4104 line			
4109	M17S2	NM_005899.2	91	cacaggttactctaaatgtgaact	334439	697862	-	-	ovarian cancer(原発性卵巣癌)	
4110	MADH1	NM_005900.1	1384	aaccgggaattccactatgaaaa	253557	537318	-	transcriptional activator	-	
4111	MADH2	NM_005901.2	685	ttgaaacactgcgaatatgctttt	133677	526398	signal_transduction			colorectal cancer(大腸癌)、lung cancer(肺癌)、colorectal cancers(結腸直腸癌)
4112	MADH2	NM_005901.2	1285	ttgctgagtgctgaagtgaagt	133703	526412	transcription_regulat	protein binding		
4113	MADH5	NM_005903.4	1033	gccttatatgccactgatgatca	253585	537339	transcription_regulat or、	transcriptional activator	-	
4114	MADH5	NM_005903.4	1227	atcttctactagtgtgttagtag	253596	537347	see also 4113 line			
4115	MADH5	NM_005903.4	1230	ttctactagtgtgttagtagtag	253597	537348	see also 4113 line			
4116	MADH5	NM_005903.4	1297	ttgttcaaatgttaatcgtaa	253602	537353	see also 4113 line			
4117	MADH5	NM_005903.4	1300	ttgtcaaatgttaatcgtaattc	253603	537354	see also 4113 line			
4118	MADH5	NM_005903.4	1426	cagagtaggaactgcaactttca	253606	537360	see also 4113 line			
4119	MADH7	NM_005904.1	580	cacgaactcagtgctcgaagaac	133722	669029	kinase_related、transcription_regulat or、	Smad3/Smad4 complex	-	
4120	MADH7	NM_005904.1	581	acgcaactcagtgctcgaagaact	133723	669030	see also 4119 line			
4121	MADH7	NM_005904.1	1194	agctcaattcggacaacaagagt	133736	669032	see also 4119 line			
4122	MAN1A1	NM_005907.2	1119	gagccattcaagcagttgtttt	334500	550008	-	mannosyl-oligosaccharide 1、2-alpha-mannosidase	-	
4123	MAN1A1	NM_005907.2	1121	ggccattcaagcagttgttttg	334502	550009	see also 4122 line			
4124	MAN1A1	NM_005907.2	1603	aggcctttatctcaactactga	334510	550024	see also 4122 line			
4125	MAP1B	NM_005909.2	473	ctcgacactctgcaagattctct	291588	675460	-	-	-	

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4126	MAP1B	NM_005909.2	3455	gccgagaaactgcgaatttcatt	291642	675498	see also 4125 line					
4127	MAP1B	NM_005909.2	3456	ccgagaacctgcattctcaattc	291643	675499	see also 4125 line					
4128	MAP1B	NM_005909.2	3544	gaccagcctgaggaattcactgc	291645	675500	see also 4125 line					
4129	MAP1B	NM_005909.2	5058	atgcccaagaccgatgtcaatt	291680	675544	see also 4125 line					
4130	MAP1B	NM_005909.2	5059	tgcccaagaccgatgtcaattc	291681	675545	see also 4125 line					
4131	MAPT	NM_005910.2	1144	gcggcagtggtgcaaatagttctac	287475	537443	-					Parkinsonism-dementia complex(パーキンソン病) 呆症候群、Alzheimer disease(アルツハイマー病)、dementia(痴呆)、disinhibition-dementia-Parkinsonism-amyotrophy complex(DDPAC症)、 pallidopontonigral degeneration(-)、Pick disease of brain(ピック病(脳))、Wilhelmsen-Lynch disease (WLD)(ウィルヘルムセン・リンチ病)、 Parkinson disease(パーキンソン病)、progressive supranuclear palsy (PSP)(進行性核上麻痺)
4132	MAPT	NM_005910.2	1145	cggcagtggtgcaaatagttctaca	287476	537444	see also 4131 line					
4133	MC4R	NM_005912.1	497	ttgggatcatcataagttgtatc	176439	625820	gpcr, receptor_activity, signal_transduction					
4134	MC4R	NM_005912.1	498	tgggatcatcataagttgtatct	176440	625821	see also 4133 line					
4135	MC4R	NM_005912.1	627	ttctctctatgtccacatgttcc	176441	625822	see also 4133 line					
4136	MCM6	NM_005915.4	1275	cagctaagagcccaattctcaag	31949	461574	phosphatase, cell cycle, transcription_regulat					
4137	MCM6	NM_005915.4	1599	gacactatgacagatcaaatca	31959	461584	see also 4136 line					
4138	MDH1	NM_005917.2	91	cagctgtgcaaatgtcatatca	220727	697766	-					
4139	MAP3K4	NM_005922.1	679	tccagatgtggatctcaataagc	89300	507181	kinase_related					
4140	MAP3K4	NM_005922.1	3285	aagaagttgtctgtttgtgtct	89377	507225	see also 4139 line					
4141	MAP3K5	NM_005923.3	3783	ttcttcggaatcataacatacaag	89514	507341	kinase_related, apoptosis					
4142	MEP1B	NM_005925.1	666	cagtaatgctactacagtaaaact	157796	558346	-					
4143	MIPEP	NM_005932.1	685	gagcagtggaacctcaatgttaaa	157935	558486	-					
4144	MLLT6	NM_005937.1	333	gcctcatgatcgcttcaacaaga	32872	461869	transcription_regulat					
4145	MLLT6	NM_005937.1	335	ctcatgatcgcttcaacaagacc	32873	461870	or					leukemia(白血病)
4146	MLLT7	NM_005938.1	937	ttcgtccacgaagcagttcaaat	7081	445917	transcription_regulat					
4147	MMP16	NM_005941.2	273	caccgactgacccagaaatgtca	158143	558679	-					
4148	MMP16	NM_005941.2	648	aacgtgatgtgataataaccatt	158153	558686	see also 4147 line					
4149	MMP16	NM_005941.2	1236	atggatacccaaatgcaaatact	158166	558698	see also 4147 line					
4150	MMP16	NM_005941.2	1242	accacatgcaaatattacttctc	158167	558699	see also 4147 line					
4151	MMP16	NM_005941.2	1372	acctgtaccctcatgacttga	158175	558706	see also 4147 line					
4152	MMP16	NM_005941.2	1375	tggttaccctcatgacttga	158176	558707	see also 4147 line					
4153	MMP16	NM_005941.2	1413	ttccccctcatgacttga	158178	558710	see also 4147 line					

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4154	MMP16	NM_005941.2	1890	cccgcacatactactactgaaa	158195	558719	see also 4147 line		
4155	MMP16	NM_005941.2	1904	taotgtaaacgcctctatgaaga	158196	558722	see also 4147 line		
4156	MTF1	NM_005955.1	1183	cagcaatcatcttgaatcaatg	7188	446120	transcription_regulat	transcription factor	-
4157	MTF1	NM_005955.1	1641	gcccacacacaaactactactga	7197	446127	see also 4156 line		
4158	MTF1	NM_005955.1	1699	gtgcaactctgtcctaactaat	7198	446128	see also 4156 line		
4159	MTF1	NM_005955.1	1700	tgcaactctgtcctaactaata	7199	446129	see also 4156 line		
4160	MTF1	NM_005955.1	1701	gccaactctgtcctaactaataa	7200	446130	see also 4156 line		
4161	MTF1	NM_005955.1	1779	gtcatggagagaacagaacttaca	7201	446132	see also 4156 line		
4162	MTNRI1B	NM_005956.2	361	tagattcagagaattccattaac	92099	508736		methylenetetrahydr	-
4163	MTNRI1B	NM_005956.2	1428	gocattgatctcggtatattcoa	92117	508756	see also 4162 line	ofolate	-
4164	MTNRI1B	NM_005956.2	1467	gacaaggctctttaaactgttt	92119	508757	see also 4162 line	dehydrogenase	-
4165	MTNRI1B	NM_005956.2	1725	acggccagcttgatctctgt	92128	508766	see also 4162 line	(NADP+)	-
4166	MTNRI1B	NM_005959.2	315	tcgggaacgcaggaattgttct	239004	628077	receptor_activity,	melatonin receptor	-
4167	MTNRI1B	NM_005959.2	316	ccgggaacgcaggaattgttct	239005	628078	see also 4166 line	gpcr	-
4168	MYLK	NM_005965.2	368	tcgcagcgagcagatgagtttc	92498	509147	kinase related	-	-
4169	HNRP1	NM_005968.2	472	atgtgaataggcagtcacttaaa	52115	484822	receptor_activity	-	-
4170	HNRP1	NM_005968.2	830	aagacttggaagcacagatttg	52119	484634	see also 4169 line	-	-
4171	HNRP1	NM_005968.2	850	ttgtgcaaatctggtattataa	52120	484636	see also 4169 line	-	-
4172	RNF6	NM_005977.2	583	aggcctattatcagtttattaat	159749	655091	-	-	-
4173	RNF6	NM_005977.2	1318	atggggctagaaagtatttaca	159769	655113	see also 4172 line	-	-
4174	RNF6	NM_005977.2	1354	accaagattagagccaataaga	159771	655115	see also 4172 line	-	-
4175	RNF6	NM_005977.2	1358	aagattagagccaataagattac	159772	655116	see also 4172 line	-	-
4176	RNF6	NM_005977.2	1900	cagtggtctctcggtcaattta	159797	655128	see also 4172 line	-	-
4177	RNF6	NM_005977.2	1902	gtggctcttcggtcaatttaag	159798	655129	see also 4172 line	-	-
4178	RNF6	NM_005977.2	1903	tggctcttcggtcaatttaagg	159799	655130	see also 4172 line	-	-
4179	SIX1	NM_005982.1	834	aggagagaacaccgaaacaataa	11278	448434	transcription_regulat	transcription factor	-
4180	SIX1	NM_005982.1	991	ggcagcgacagagctcaactat	11279	448436	see also 4179 line	-	-
4181	SIX1	NM_005982.1	994	agccagcgagctcaactattct	11281	448437	see also 4179 line	-	-
4182	SKP2	NM_005983.2	1435	tgcaaaagcccagttgtctatga	219800	607241	cell_cycle	-	-
4183	AKR1D1	NM_005989.1	1020	tctgaatacccatctcatgatg	226338	755774	-	oxidoreductase	-
4184	STK10	NM_005990.1	2495	gacgcgcagtcgccaagtacaaga	101387	515469	kinase_related	protein kinase CK2	-
4185	TSNAX	NM_005999.2	753	atgcggatgtgtatttaacagtg	43100	541775	-	protein transporter	-
4186	UCHL3	NM_006002.3	496	cagactgagggaccacaaagtataga	190707	584223	-	ubiquitin C-	-
4187	SIAT8B	NM_006011.2	177	atctaatagagctgaagtgttaa	213009	600858	-	terminal hydrolase	-
								transferase,	-
								transferring	-
								glycosyl groups	-

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4188	SMARCF1	NM_006015.3	2588	tccatgaaccaatcaagcattgc	40100	744362	transcription_regulat	-
4189	SMARCF1	NM_006015.3	3078	ttgtgcactctatccaaac	40110	744370	see also 4188 line	-
4190	SMARCF1	NM_006015.3	3519	acctctatgcctctatgtct	40117	744381	see also 4188 line	-
4191	SMARCF1	NM_006015.3	4049	gagccaataaggatccttatgg	40126	744387	see also 4188 line	-
4192	SMARCF1	NM_006015.3	4367	cagaaacagatgattccttatgg	40130	744390	see also 4188 line	-
4193	SMARCF1	NM_006015.3	4481	cggccaatgatggcacatagg	40135	744393	see also 4188 line	-
4194	SMARCF1	NM_006015.3	5338	gaggcgctcacaatgaagaca	40145	744403	see also 4188 line	-
4195	SMARCF1	NM_006015.3	5340	ggcgctcaaatgaagacatt	40146	744404	see also 4188 line	-
4196	SMARCF1	NM_006015.3	5370	cggaggcatggcgggtaatgatg	40148	744405	see also 4188 line	-
4197	SMARCF1	NM_006015.3	5373	aggcatggcgggtaatgatgcc	40149	744406	see also 4188 line	-
4198	SMARCF1	NM_006015.3	5843	gtggactctcagataagcttgg	40156	744419	see also 4188 line	-
4199	SMARCF1	NM_006015.3	6726	tgaataccctcagcaaacacgc	40170	744435	see also 4188 line	-
4200	CD164	NM_006016.3	601	ttgggtgtgcaggctgtatattt	308394	708873	signal transduction	-
4201	CD164	NM_006016.3	602	tgggtgtcaggctgtatattt	308395	708874	see also 4200 line	-
4202	C10orf7	NM_006023.1	774	ttctcgaataatgtgtgaatg	306001	748570	cell_cycle	-
4203	C10orf7	NM_006023.1	960	atgaagactttgtgttcgata	306005	748585	see also 4202 line	-
4204	P11	NM_006025.2	863	ggggactcggagtggttgaaca	183837	698414	serine-type endopeptidase	-
4205	P11	NM_006025.2	866	gactcggagtggttgaacatgt	183838	698415	see also 4204 line	-
4206	CDC42BP	NM_006035.2	5023	ggatccaaatgatataccacc	76025	807883	kinase_related	-
4207	SPATA2	NM_006038.2	1667	ctgcaccacagtttcaaaagtct	284480	771548	molecular_function unknown	-
4208	UBE4B	NM_006048.2	845	tgtctcaatgtccacaacatga	334889	712301	apoptosis	-
4209	UBE4B	NM_006048.2	988	cagctccacagagctggatatac	334691	712303	see also 4208 line	-
4210	UBE4B	NM_006048.2	1157	ggccttacagctgtgtctgaaga	334694	712310	see also 4208 line	-
4211	UBE4B	NM_006048.2	1438	caggaaacagcccatgtcttgc	334698	712317	see also 4208 line	-
4212	UBE4B	NM_006048.2	1502	agcctctgtggaggcaagtaatt	334701	712318	see also 4208 line	-
4213	DSR3	NM_006052.1	569	tggcggtgtttgcaaacattcagt	279519	673038	molecular_function unknown	-
4214	LANCL1	NM_006055.1	704	ggcaaaagtctccactgatgtatg	243478	692488	gpcr、receptor activity、signal transduction	-
4215	TFG	NM_006070.3	411	atgatgaattagtctaattgatg	284708	708966	kinase_related	-
4216	TFG	NM_006070.3	1494	aacttgacacctgttatcgataa	284737	708993	see also 4215 line	-
4217	TRDN	NM_006073.1	818	cagtatgcattctgtcgatatat	312504	740369	-	-
4218	TRDN	NM_006073.1	829	ctgtcgatatattgatgacatat	312505	740372	see also 4217 line	-
4219	CBARA1	NM_006077.1	627	caggaaacagaaaaatttctga	139225	545431	-	-
4220	CBARA1	NM_006077.1	729	tccactctcagagaaatttga	139228	545433	see also 4219 line	-
4221	CACNG2	NM_006078.2	359	tagctgtgggaaccgactattgg	261560	645043	channel	voltage-gated calcium channel
4222	SEMA3A	NM_006080.1	800	acgtacataggctcagatagc	319999	684425	receptor_activity	-
4223	SEMA3A	NM_006080.1	938	tgcaggatgtattcttaataaac	320004	684432	see also 4222 line	-

papillary Thyroid Carcinomas(副甲状腺乳頭癌)、thyroid cancer(甲状腺癌)

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4224	SEMA3A	NM_006080.1	1227	aagtcattccagccatgtacaac	320010	684438	see also 4222 line		
4225	SEMA3A	NM_006080.1	1667	gacgcacaagacgacagaatata	320029	684452	see also 4222 line		
4226	SEMA3A	NM_006080.1	1668	acgcacaagacgacagaatataa	320030	684453	see also 4222 line		
4227	SEMA3A	NM_006080.1	1669	cgcacaagacgacagaatataag	320031	684454	see also 4222 line		
4228	CEPT1	NM_006090.2	733	aacattgcgatttgggaataatig	209494	748802	-	-	
4229	CEPT1	NM_006090.2	813	gacacacatttttggcaatctatg	209496	748806	see also 4228 line		
4230	CEPT1	NM_006090.2	814	accacatttttggcaatctatga	209497	748807	see also 4228 line		
4231	CEPT1	NM_006090.2	885	tagcaggagacatttttctctgt	209501	748810	see also 4228 line		
4232	DLC1	NM_006094.3	334	agccgggacacattatctctaaca	130203	534422	-	-	hepatocellular carcinoma(肝癌)
4233	DLC1	NM_006094.3	339	gacacattatctctaacacaaat	130204	534423	see also 4232 line		
4234	DLC1	NM_006094.3	1414	caggagacacggtgtctctacac	130224	534449	see also 4232 line		
4235	DLC1	NM_006094.3	1750	aggggatgcaggagatagtcatt	130228	534457	see also 4232 line		
4236	ATP8A1	NM_006095.1	868	gtggaacggattacaatgtaca	73618	495221	-	plasma membrane cation-transporting ATPase	-
4237	ATP8A1	NM_006095.1	1106	cccaggcatacttcataaattgg	73629	495224	see also 4236 line		
4238	ATP8A1	NM_006095.1	1193	agggaacttggccagggttaataac	73634	495228	see also 4236 line		
4239	ATP8A1	NM_006095.1	1968	aacagccattggagataaattac	73658	495250	see also 4236 line		
4240	ATP8A1	NM_006095.1	1997	aagtcctgaacacatagaaacg	73660	495252	see also 4236 line		
4241	ATP8A1	NM_006095.1	2007	aacctagaacacgtatgaag	73661	495253	see also 4236 line		
4242	ATP8A1	NM_006095.1	2243	ccctcaatatgccttaaccctt	73666	495258	see also 4236 line		
4243	ATP8A1	NM_006095.1	2816	aggtttctgggttcattgttta	73685	495276	see also 4236 line		
4244	GNB2L1	NM_006098.2	439	ctgcaacccggcagattgtctct	125244	529148	kinase-related, signal transduction	protein kinase C binding	-
4245	HEC	NM_006101.1	1225	atgaattgcagcagactattaat	307598	713265	-	-	-
4246	SKB1	NM_006109.2	317	agggactgggaatacctcatttgt	214904	604813	-	-	-
4247	SKB1	NM_006109.2	1897	ctggcgatgcagcaattccaaga	214926	604844	see also 4246 line		
4248	PPIE	NM_006112.1	194	agcagctatgcacacaacatgaatg	53547	474972	-	cyclophilin-type peptidyl-prolyl cis-trans isomerase	small cell lung cancer(肺癌)
4249	VAV3	NM_006113.3	1471	aaggacaaaatgggttagaattt	172366	569724	signal transduction	guanyl-nucleotide release factor	-
4250	VAV3	NM_006113.3	1713	ttgggaagagtagagacaatttgg	172374	569731	see also 4249 line		
4251	VAV3	NM_006113.3	1725	gacaattgtggcagaggttaattc	172376	569732	see also 4249 line		
4252	VAV3	NM_006113.3	2164	atgcaattagcattaagtaacaat	172390	569744	see also 4249 line		
4253	VAV3	NM_006113.3	2362	cagctggacagaggggttaataga	172399	569751	see also 4249 line		
4254	PECI	NM_006117.1	167	caggaaaacgaagtgaagctaaaa	172499	569868	-	dodecenoyl-CoA delta-isomerase	-
4255	NCK1	NM_006153.3	215	gtcctgtagcaggttagaatt	316890	607144	-	-	melanoma(メラノーマ)
4256	NCK1	NM_006153.3	216	tcctgtggcggaggttcgaattc	316891	607145	see also 4255 line		
4257	NCK1	NM_006153.3	221	gtgcggaggttcgaattccatga	316892	607146	see also 4255 line		
4258	NCK1	NM_006153.3	373	ctgcaatctctctgatgatgt	316901	607154	see also 4255 line		
4259	NCK1	NM_006153.3	1036	gtgaattcttcgccaaatgatttc	316930	607183	see also 4255 line		
4260	NEDD4	NM_006154.1	484	aagtcacaaaatcaagagtttaag	230226	537858	-	-	-

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4261	NELL2	NM_006159.1	176	ccctacagattgacgtcttaaca	148868	550502	-	structural molecule	-
4262	NELL2	NM_006159.1	187	gacgtcttaacagagtgtaaac	148869	550503	see also 4261 line	transcription_regulat	-
4263	NEUROD2	NM_006160.2	1264	gagaatctctgtcttaccgatat	334909	462610	or	transcription_regulat	transcription factor
4264	NFE2	NM_006163.1	708	ctcaggattatccctcaactata	7688	462685	or	transcription_regulat	p18(MAFK)/p45
4265	NFE2	NM_006163.1	1003	aacttgccggtagatgactttaa	7698	462695	see also 4264 line	heterodimer	-
4266	NFE2L2	NM_006164.2	149	gtccacagcagacatgatttga	7730	462737	or	transcription_regulat	translation regulator
4267	NFE2L2	NM_006164.2	1262	tggccctgggaagtgtcaacaga	7755	462766	see also 4266 line	transcription_regulat	-
4268	NFRKB	NM_006165.2	1773	agcaggagcgttacaggatagc	334941	778586	or	transcription_regulat	-
4269	NFYB	NM_006166.2	206	gaggacagcatgaatgacatga	8120	462862	or	transcription_regulat	NF-YA/NF-YB/NF-YC
4270	NPY5R	NM_006174.2	310	ttctgattgggtctctatactt	176088	571293	gpcr, receptor activity, signal transduction	neuropeptide Y receptor	-
4271	NSF	NM_006178.1	913	gtcaatgggcagcaaatccttaa	95027	510580	-	serine-type endopeptidase	schizophrenia(精神分裂病)
4272	NSF	NM_006178.1	2169	ctgataaggatcaagaagttac	95062	510606	see also 4271 line	transcription_regulat	-
4273	NSF	NM_006178.1	2174	taggaatcaagaagtactaatg	95063	510607	see also 4271 line	transcription_regulat	-
4274	NTRK2	NM_006180.2	1380	cactgtgtcattccattcactgt	95100	510634	kinase related, receptor activity, signal transduction	neurotrophin TRKB receptor	neuroblastoma(神経芽細胞腫)
4275	NUMA1	NM_006185.1	5696	agccagacagcgcccaactcatcg	292106	694226	-	transcription_regulat	-
4276	NR4A2	NM_006186.2	586	ccggacagcagtcctcctcaatga	8626	447293	or, receptor activity, transcription_regulat	DNA replication origin binding	rheumatoid arthritis(関節リウマチ)、alcoholism(アルコール依存症)、Parkinson disease(パーキンソン病)
4277	ORC2L	NM_006190.3	1589	ctggtatgaactactacataca	20553	670133	or	transcription_regulat	-
4278	ORC2L	NM_006190.3	1604	tacatacagtccttatactgaag	20554	670134	see also 4277 line	transcription_regulat	-
4279	ORC2L	NM_006190.3	1855	gggcccagttactgaatttagg	20562	670143	see also 4277 line	transcription_regulat	-
4280	PAX1	NM_006192.1	602	tcctggggcatccggagctttatg	34505	463364	or	transcription_regulat	translation regulator
4281	PBX3	NM_006195.2	432	agctaatagagactgacacaatag	8977	447622	or	transcription_regulat	translation regulator
4282	PBX3	NM_006195.2	439	gagactggacaatatgcttttgg	8978	447623	see also 4281 line	transcription_regulat	lymphoblastic leukemia(リンパ性白血病)
4283	PBX3	NM_006195.2	775	tgtgaagcagttatgattttaa	8985	447627	see also 4281 line	transcription_regulat	-
4284	PBX3	NM_006195.2	819	gacggaagaagcgttaactcagtc	8987	447629	see also 4281 line	transcription_regulat	-
4285	PBX3	NM_006195.2	1240	tacctcgcgtcagttatcaatc	8994	447636	see also 4281 line	transcription_regulat	-
4286	PBX3	NM_006195.2	1241	acctcgcgtcagttatcaatca	8995	447637	see also 4281 line	transcription_regulat	-
4287	PBX3	NM_006195.2	1245	tcagtcagttatcaatcagacgc	8996	447638	see also 4281 line	transcription_regulat	-
4288	PCBP1	NM_006196.2	941	ccggattcgcgggaattgactcc	19643	703420	-	single-stranded DNA binding	-

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4289	POBP1	NM_006196.2	1008	tactcaaacaccaccatgaactca	19644	703422	see also 4288 line	transcription_regulat	-	-
4290	PCM1	NM_006197.2	719	ttgcctatgcagattactactaa	304082	713989	or	-	-	-
4291	PCM1	NM_006197.2	721	gcctatgcagattactactaa	304083	713991	see also 4290 line	see also 4290 line	-	-
4292	PCM1	NM_006197.2	3244	ttgggtgcagagctctcttaacg	304170	714052	see also 4290 line	see also 4290 line	-	-
4293	PCM1	NM_006197.2	6020	cccttagtgcctagtagtaaaga	304261	714146	see also 4290 line	see also 4290 line	-	-
4294	PCM1	NM_006197.2	6094	tactgaatctccagtgtagtga	304263	714149	see also 4290 line	see also 4290 line	-	-
4295	PCM1	NM_006197.2	6096	ctgaatctccagtgtagtgaat	304264	714150	see also 4290 line	see also 4290 line	-	-
4296	PCM1	NM_006197.2	6100	atctccagtgtagtgaatgaat	304265	714151	see also 4290 line	kinase_related,	-	-
4297	PCTK1	NM_006201.2	1743	ggggagcgggatccacaaacttc	95956	511400	cell_cycle	-	-	-
4298	PCTK1	NM_006201.2	1744	ggggagcgggatccacaaacttc	95957	511401	see also 4297 line	see also 4297 line	-	-
4299	PDE4D	NM_006203.2	1214	tgcagtgcaatacatgatgtag	197891	590193	signal_transduction	cAMP-specific	phosphodiesterase	atherosclerosis(粥状硬化症)
4300	PDE4D	NM_006203.2	1393	aacaaagacaactcttaaggaaa	197898	590198	see also 4299 line	see also 4299 line	-	-
4301	PDE4D	NM_006203.2	1622	gtggacggaccggataatggagg	197907	590201	see also 4299 line	see also 4299 line	-	-
4302	PDE6C	NM_006204.2	868	atgtgtgcagccaataaagtatt	197727	590324	signal_transduction	cGMP-specific	phosphodiesterase	-
4303	ENPP1	NM_006208.1	1412	tactattcatttaactatgaagg	60603	484175	phosphatase	nucleotide	pyrophosphatase	diabetes mellitus(糖尿病)、diabetes(糖尿病)
4304	ENPP2	NM_006209.2	1482	aacagcaccttcccaaacgttgg	60695	484274	signal_transduction	gpr	-	-
4305	ENPP2	NM_006209.2	1697	aagactaagtgctccattga	60700	484278	see also 4304 line	see also 4304 line	-	-
4306	PIK3CA	NM_006218.1	323	cagtaggcaaccgtgaagaaaag	207268	597220	kinase_related,	phosphatidylinositol	3-kinase, class	ovarian cancer(原発性卵巣癌)、head and neck squamous cell carcinoma(頭頸部扁平上皮細胞)
4307	PIK3CA	NM_006218.1	327	aggcaaccgtgaagaaaagatcc	207269	597221	signal_transduction	see also 4306 line	-	-
4308	PIK3CA	NM_006218.1	1106	aaccattatgtacaaatgtgaac	207281	597243	see also 4306 line	see also 4306 line	-	-
4309	PIK3CA	NM_006218.1	1117	gacaatgtgaacactcaaaagagt	207283	597245	see also 4306 line	see also 4306 line	-	-
4310	PIK3CA	NM_006218.1	1159	tggatgaatggctgaattatga	207284	597247	see also 4306 line	see also 4306 line	-	-
4311	PIK3CA	NM_006218.1	1425	atgcttagagttggagttgact	207288	597259	see also 4306 line	see also 4306 line	-	-
4312	PIK3CA	NM_006218.1	3040	atgccagaactacaactcttga	207343	597310	see also 4306 line	see also 4306 line	-	-
4313	PIK3CB	NM_006219.1	143	gggaagctaacattcttatatt	207349	597323	kinase_related,	phosphatidylinositol	3-kinase, class	-
4314	PIK3CB	NM_006219.1	146	aagtaacattcttatatttaag	207350	597324	signal_transduction	cell_cycle, gpr	-	-
4315	PIK3CB	NM_006219.1	776	gtgatcatcactactaaatcagtc	207372	597346	see also 4313 line	see also 4313 line	-	-
4316	PIK3CB	NM_006219.1	3153	aagctggactactactaaatgaact	207444	597415	see also 4313 line	see also 4313 line	-	-
4317	PITPN	NM_006224.2	268	gtgtctgtagatgagatcaagt	173624	570292	-	phosphatidylinositol	transporter	-
4318	PITPN	NM_006224.2	704	aagaccagcaaaaatttaactct	173635	570299	see also 4317 line	see also 4317 line	-	-
4319	PNOC	NM_006228.2	647	cagaagcagttcagtgagtttat	169649	567391	signal_transduction	opioid peptide	-	-



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4320	POLE	NM_006231.1	1271	gtgggtgaagagagacaggtacc	35822	464061	-	zeta DNA polymerase
4321	POLE	NM_006231.1	1297	ctgtggcagctataatctcaag	35823	464062	see also 4320 line	
4322	POLE	NM_006231.1	3161	gtctcggaagctgggaagattacg	35845	464109	see also 4320 line	
4323	POLE	NM_006231.1	4486	caggagatatcccatatctac	35854	464135	see also 4320 line	
4324	POLE	NM_006231.1	4487	aggaagtatccgcatactacc	35855	464136	see also 4320 line	
4325	PPEF2	NM_006239.2	1882	gcctccaaactactatgaagtgg	151485	552635	phosphatase	-
4326	PPP2R5B	NM_006244.2	837	tgggggtgatgttgactcttgg	298774	666329	phosphatase, signal_transduction	protein phosphatase type
4327	PPP2R5D	NM_006245.2	864	accattttgcacgcacatctatgg	298811	666389	phosphatase, signal_transduction	-
4328	PPP2R5D	NM_006245.2	874	atcgcacatctatggcaagttttg	298812	666390	see also 4327 line	-
4329	PPP2R5E	NM_006246.2	622	tggataaagttagacaggtttct	298822	666404	phosphatase, signal_transduction	protein phosphatase type
4330	PPP2R5E	NM_006246.2	641	ttctcggaagctcgtcagaaaag	298823	666405	see also 4329 line	-
4331	PPP2R5E	NM_006246.2	816	ttcatggacacgcctctctgatct	298832	666406	see also 4329 line	-
4332	PPP2R5E	NM_006246.2	819	atggacacgcctctctgatcttaa	298833	666407	see also 4329 line	-
4333	PPP2R5E	NM_006246.2	820	tggacacgcctctctgatcttaa	298834	666408	see also 4329 line	-
4334	PPP2R5E	NM_006246.2	855	aagcgcctcactcttaataaact	298836	666410	see also 4329 line	-
4335	PPP2R5E	NM_006246.2	857	gcgcctcactcttaataaactgg	298837	666411	see also 4329 line	-
4336	PPP2R5E	NM_006246.2	876	ctgtggactacattaccataaag	298838	666412	see also 4329 line	-
4337	PRKCH	NM_006255.2	1024	acgcctgcacatctcttaattgta	97165	512182	-	protein kinase C
4338	PRKCH	NM_006255.2	1025	gcgtgcacatctcttaattgta	97166	512183	see also 4337 line	-
4339	PRKCH	NM_006255.2	1028	tgccatcactaattgttagcagc	97167	512184	see also 4337 line	-
4340	PRKCH	NM_006255.2	1198	gcgacaaggaactcagtgtaaaa	97170	512188	see also 4337 line	-
4341	PRKCL2	NM_006256.1	656	aacttcggatggagaagaattaagg	97289	489558	kinase_related, signal_transduction	protein serine/threonine kinase
4342	PRKCL2	NM_006256.1	1287	caggctcagctgaactggaaattt	97320	489578	see also 4341 line	-
4343	PRKQ	NM_006257.1	359	gccgaatgctaataatgaatgaaga	97505	512385	kinase_related	protein tyrosine kinase
4344	PRKG1	NM_006258.1	640	gaccgtcaagactcttggtaaatg	97576	512442	kinase_related, signal_transduction	protein tyrosine kinase
4345	PRKG1	NM_006258.1	678	ttgatcgacaatgttttcaaca	97581	512473	see also 4344 line	-
4346	PRKG1	NM_006258.1	1814	ttgaggggattggacatgataga	97612	512473	see also 4344 line	-
4347	PRKG1	NM_006258.1	1816	gaggggattggacatgatagaat	97613	512474	see also 4344 line	-
4348	PRKG2	NM_006259.1	1564	atcgtacttttaaggaacaataag	97648	512521	kinase_related, signal_transduction	protein kinase CK2
4349	PRKG2	NM_006259.1	1565	tcgtacttttaaggaacaataagt	97649	512522	see also 4348 line	-
4350	PRKG2	NM_006259.1	2134	aacacaggtgggttaaatggttt	97665	512538	see also 4348 line	-
4351	PTPN13	NM_006264.1	1262	cagttcgagaagatacaaaacttat	193249	586652	phosphatase	-
4352	PTPN13	NM_006264.1	2711	ttgagagagcttctgttaggac	193294	586686	see also 4351 line	-
4353	PTPN13	NM_006264.1	2749	ggactgtgttagaggaatttaaat	193296	586687	see also 4351 line	-

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4354	PTPN13	NM_006264.1	2751	gtctgttagagagatttaatatgg	193297	586688	see also 4351 line		
4355	PTPN13	NM_006264.1	5577	atcaaaaacagtcagattagttta	193371	586756	see also 4351 line		
4356	RAD21	NM_006265.1	409	tgcagactgtaaggaagcattca	134896	552745	apoptosis,	-	
4357	RALGDS	NM_006266.1	492	ttcaaaaggtaagtagtagtga	296460	570330	signal transduction	guanyl-nucleotide release factor	-
4358	RALGDS	NM_006266.1	517	ccctcagcgcctcctcagatag	296461	570331	see also 4357 line		
4359	RANBP2	NM_006267.3	9670	ttggaactttaagcatgtagtatt	127752	619535	-	peptidyl-prolyl cis-trans isomerase	-
4360	RANBP2	NM_006267.3	9671	tggactttaagcatgtagtattt	127753	619536	see also 4359 line		
4361	RANBP2	NM_006267.3	9683	atgtagtatttggatttgaag	127754	619538	see also 4359 line		
4362	DPF2	NM_006268.3	149	cggagtagccagagcaattgt	25574	458649	apoptosis, transcription_regulat or	DNA binding	-
4363	ITSN2	NM_006277.1	863	cagtctctgattgatttagatc	146926	553822	-		-
4364	ITSN2	NM_006277.1	869	ctgattgattagatctagtag	146927	553823	see also 4363 line		
4365	ITSN2	NM_006277.1	1331	gacaaacggaagccaactatga	146934	553834	see also 4363 line		
4366	ITSN2	NM_006277.1	2004	aagaattatgcgaagacttaaa	146948	553850	see also 4363 line		
4367	ITSN2	NM_006277.1	2620	tggtagcttttaggtgttttc	146965	553860	see also 4363 line		
4368	SIAT4C	NM_006278.1	215	tcgtcatgtgtgtgtattccatc	212786	601133	-	transferase, transferring glycosyl groups	-
4369	SIAT4C	NM_006278.1	577	gtgtcatcagattgaacaatgc	212792	601144	see also 4368 line		
4370	SIAT6	NM_006279.2	558	tggtatcaaaagcaagacaatc	212947	601086	-	-	-
4371	SIAT6	NM_006279.2	567	aggtcaagacaatctgatcaag	212948	601087	see also 4370 line		
4372	SIAT6	NM_006279.2	1167	cgcacccctgcactactatgaga	212956	601096	see also 4370 line		
4373	STK3	NM_006281.1	754	tccttggcattacttctctataga	101666	515671	kinase_related, apoptosis, signal_transduction	protein kinase CK2	-
4374	STK4	NM_006282.2	603	aggtcaacttacagataccatgg	101933	515795	kinase_related, apoptosis, signal_transduction	protein tyrosine kinase	-
4375	TACC1	NM_006283.1	479	cagctcggattctgaaggtaatt	322156	792666	-	-	-
4376	TBDP2	NM_006286.1	635	gagcggatagaacggataaagc	13235	441498	transcription_regulat or, cell_cycle	translation regulator	-
4377	TBDP2	NM_006286.1	1032	tggtaaatcaggagactacttot	13240	441503	see also 4376 line		
4378	THY1	NM_006288.2	162	ctggactgcgcgaatgagaatc	284743	694836	-	-	diabetes(糖尿病)
4379	TLN1	NM_006289.2	3224	gtggaaccttggagatgattct	119519	524650	-	structural constituent of cytoskeleton	-
4380	TLN1	NM_006289.2	3300	agctcagatggcaagcttaaac	119521	524653	see also 4379 line		
4381	TLN1	NM_006289.2	4647	tacttccaagcgcaggtt-gtac	119537	524666	see also 4379 line		
4382	TLN1	NM_006289.2	4650	tgccaagcgcaggtt-gtacagt	119538	524667	see also 4379 line		
4383	TLN1	NM_006289.2	5749	aaccagctgaccagtgactatgg	119547	524685	see also 4379 line		

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4384	TNFAIP3	NM_006290.2	609	ggccgaagtggaacttcagtaca	42382	469217	apoptosis, transcription_regulat	Transcription factor p65	-
4385	TNFAIP3	NM_006290.2	612	ccgaagtggaacttcagtacaact	42383	469218	see also 4384 line	transcription co- repressor	breast cancer(乳癌)
4386	TSGL1	NM_006292.2	389	ttgttaagcctactagttcaatg	43033	541751	transcription_regulat	transcription co- repressor	
4387	TSGL1	NM_006292.2	394	aagcctactagttcaatgactat	43034	541752	see also 4386 line		
4388	TSGL1	NM_006292.2	395	agcctactagttcaatgactatt	43035	541753	see also 4386 line		
4389	TSGL1	NM_006292.2	396	gcctactagttcaatgactatta	43036	541754	see also 4386 line		
4390	VARS2	NM_006295.1	2002	cgcacatgacacaaatgactat	107306	517520	-	valine-tRNA ligase	-
4391	VRK2	NM_006296.2	809	ggcataatgggacaatagagttt	107505	517616	kinase_related	-	-
4392	MAP3K12	NM_006301.2	1148	accacgaaatcgcccatcttc	89078	507024	kinase_related	protein tyrosine kinase	-
4393	MAP3K12	NM_006301.2	1247	ggcagagtgccgggaagaagtaa	89079	507028	see also 4392 line		
4394	MAP3K12	NM_006301.2	1253	gtgcgcggaagaagtaaaactgc	89080	507030	see also 4392 line		
4395	JTV1	NM_006303.2	769	ctctgtttggccagaagcataat	16318	760888	-	-	-
4396	SHEM1	NM_006304.1	204	gactgggctgctgtagatgaaga	284196	667692	-	molecular_function unknown	split-hand and split-foot(裂手・裂足)
4397	SMC1L1	NM_006306.2	109	tcgtacaaggctcgacagattat	100453	514698	cell_cycle、 signal transduction	-	-
4398	SMC1L1	NM_006306.2	171	tggctctgtaagtoaaatctca	100454	514700	see also 4397 line		
4399	SMC1L1	NM_006306.2	1727	gcccggagctgattcagtatctc	100468	514735	see also 4397 line		
4400	SMC1L1	NM_006306.2	2301	tggccctcgcatatgaatgatca	100476	514752	see also 4397 line		
4401	SMC1L1	NM_006306.2	2303	ggcctcgcatatgaatgaatgaag	100477	514753	see also 4397 line		
4402	SMC1L1	NM_006306.2	2990	cacgagagggcctcattgagatt	100489	514768	see also 4397 line		
4403	SMC1L1	NM_006306.2	3569	ttggcaagtgccaaattacatc	100500	514779	see also 4397 line		
4404	NPEPPS	NM_006310.2	1018	gagaactggggcctgttacttta	158624	559312	-	zinc binding	-
4405	NPEPPS	NM_006310.2	1021	aactggggcctgttacttatag	158625	559313	see also 4404 line		
4406	NPEPPS	NM_006310.2	1959	cactgtagagggttctaaagta	158644	559340	see also 4404 line		
4407	NPEPPS	NM_006310.2	1991	ttgtgaatgagcccaattatact	158646	559341	see also 4404 line		
4408	NPEPPS	NM_006310.2	1993	gtgaatgagcccaattatactgt	158647	559342	see also 4404 line		
4409	NPEPPS	NM_006310.2	2235	agcccgctgctgggttaaggacc	158649	559346	see also 4404 line		
4410	NCOR1	NM_006311.2	1246	agcaaaacaaggaaatactatga	33565	462407	transcription_regulat	transcription co- repressor	-
4411	NCOR1	NM_006311.2	1440	ctctgtgattccaccatgatgt	33567	462413	see also 4410 line		
4412	NCOR1	NM_006311.2	5205	gaccaatatgcctccacaaattt	33652	462496	see also 4410 line		
4413	NCOR1	NM_006311.2	5666	tggcagctcccggttaacaact	33662	462502	see also 4410 line		
4414	NCOR1	NM_006311.2	6043	gtgatcatcccgccgaatgctgc	33667	462510	see also 4410 line		
4415	NCOR1	NM_006311.2	6804	aagtacttgcctcattctca	33679	462519	see also 4410 line		
4416	USP15	NM_006313.1	56	tcgggaagctgctcaaaactcgc	188921	582942	-	ubiquitin-specific protease	-
4417	USP15	NM_006313.1	466	agcaagctgacacaatagatcac	188938	582958	see also 4416 line		
4418	USP15	NM_006313.1	907	gacaatcccttaggaatgagagg	188952	582973	see also 4416 line		
4419	USP15	NM_006313.1	969	gtgtcttggaagtttagctacg	188958	582977	see also 4416 line		

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4420	RNF3	NM_006315.3	484	caggagctgcctggtgaagtaacc	335197	777911	-	-
4421	CDIPT	NM_006319.2	374	tcgattatgccggattgtcttc	161802	606496	-	-
4422	CDIPT	NM_006319.2	375	cagttatcccgattgtcttcg	161803	606497	see also 4421 line	-
4423	TUBGCP3	NM_006322.3	1074	gagttggatggttgcaataaa	309696	675978	-	-
4424	TUBGCP3	NM_006322.3	1506	ggagacactaccacgaatttt	309707	675990	see also 4423 line	-
4425	TUBGCP3	NM_006322.3	1507	aggacactaccacgaattttt	309708	675991	see also 4423 line	-
4426	TUBGCP3	NM_006322.3	1509	gacactaccacgaattttgt	309709	675992	see also 4423 line	-
4427	TUBGCP3	NM_006322.3	1511	cacttacacgaattttgttag	309710	675993	see also 4423 line	-
4428	TUBGCP3	NM_006322.3	1662	ttcttgacacagttgtcatga	309720	676001	see also 4423 line	-
4429	TUBGCP3	NM_006322.3	2717	gtgtctacagttgcgaatttga	309756	676029	see also 4423 line	-
4430	RBM14	NM_006328.1	167	gagctgcgcgtcatgaaacagt	65329	485704	-	-
4431	RBM14	NM_006328.1	170	ctggagccgtcatgaaacagttcg	65330	485705	see also 4430 line	-
4432	RBM14	NM_006328.1	1314	gcccagctgcccctatgtgc	65339	485720	see also 4430 line	-
4433	FBLN5	NM_006329.2	968	ttgatgaattgcgtatgtgtac	144202	548380	-	integrin binding
4434	FBLN5	NM_006329.2	1768	gtgatcagactcggatataatgt	144221	548397	see also 4433 line	-
4435	FBLN5	NM_006329.2	1772	tcgactcggatataatgtgc	144222	548398	see also 4433 line	-
4436	BAIAP2	NM_006340.1	118	atgcaccggctcaccggaaaatgt	120836	532492	signal_transduction	-
4437	MERTK	NM_006343.1	1183	tgcaagccctggcttaattacagc	90947	508215	receptor_activity, kinase_related, signal_transduction	transmembrane receptor protein
4438	MERTK	NM_006343.1	2496	ggcgtgaccattgtgggaataacg	90982	508248	see also 4437 line	tyrosine kinase
4439	SLC30A9	NM_006345.2	902	ccggttcagcaagatgtgttctca	11467	654032	transcription_regulat	-
4440	SLC30A9	NM_006345.2	921	ctcagaagctatacactcattat	11468	654034	see also 4439 line	-
4441	SLC30A9	NM_006345.2	923	cagaagctatacactcattatct	11469	654035	see also 4439 line	-
4442	SLC30A9	NM_006345.2	927	agctatacactcattatctgata	11470	654036	see also 4439 line	-
4443	PIBF1	NM_006346.1	1713	aagaagactaaagcaagtgcttc	335284	738698	-	-
4444	TIMM44	NM_006351.2	1017	ctcaagactggtgctatgaagc	102637	516461	transcription_regulat	-
4445	ZNF238	NM_006352.2	1367	gagagtgatgttggcactaatga	44617	470651	transcription_regulat	specific RNA polymerase II
4446	ZNF238	NM_006352.2	1369	gagtgatgttggcactaatgact	44618	470652	see also 4445 line	transcription factor
4447	ZNF238	NM_006352.2	1377	ttggcactaatgactatgaacatg	44619	470653	see also 4445 line	-
4448	ZNF238	NM_006352.2	1378	tggcactaatgactatgacatgg	44620	470654	see also 4445 line	-
4449	SLC9A6	NM_006359.1	927	atcttcagtgatcttttgcacat	258280	642492	-	solute:hydrogen antiporter
4450	SLC9A6	NM_006359.1	1339	tacttaatttgggtagaagaagt	258289	642505	see also 4449 line	-
4451	NXF1	NM_006362.3	677	ccgaagatatactatcatcatca	53003	474517	-	protein transporter
4452	NXF1	NM_006362.3	1139	cagcgccattcgcgaacgatttc	53011	474537	see also 4451 line	-
4453	NXF1	NM_006362.3	1140	agcgccattcgcgaacgatttcc	53012	474538	see also 4451 line	-
4454	NXF1	NM_006362.3	1149	cgcgaacgatttcccaagtact	53013	474539	see also 4451 line	-
4455	NXF1	NM_006362.3	1691	tagcaattcagggctatgtattg	53022	474559	see also 4451 line	-
4456	NXF1	NM_006362.3	1692	agcaattcagggctatgtattg	53023	474560	see also 4451 line	-

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4457	NXF1	NM_006362.3	1700	agggctatgtattgaatgatg	53024	474561	see also 4451 line	
4458	SEC23B	NM_006363.3	670	tccgagggcccaaggatttaac	270052	652343	-	-
4459	SEC23B	NM_006363.3	671	tcaggagacaaaggatttaact	270053	652344	see also 4458 line	
4460	SEC23B	NM_006363.3	1339	acctctgggaactgaagatg	270071	652361	see also 4458 line	
4461	SEC23A	NM_006364.2	412	gaccactgctgcagctttga	269988	652292	-	protein transporter
4462	SEC23A	NM_006364.2	415	cacttgcgctgacatttgaatc	269989	652293	see also 4461 line	
4463	SYNCRIP	NM_006372.3	672	agggctaggtgacatagatt	55053	471466	-	-
4464	SYNCRIP	NM_006372.3	771	caagatctctctatgttcaga	55057	471473	see also 4463 line	
4465	COVA1	NM_006375.2	972	gagtgtaaacagcgtatgctagc	58753	482039	-	-
4466	COVA1	NM_006375.2	1059	gtgtccactattcagatcaga	58757	482040	see also 4465 line	
4467	COVA1	NM_006375.2	1366	aggcatgggaccacttcacaaa	58763	482047	see also 4465 line	
4468	COVA1	NM_006375.2	1367	ggcatgggaccacttcacaaaag	58764	482048	see also 4465 line	
4469	UNC13B	NM_006377.2	1000	aggtatggctctctctgtaatgt	252372	673208	receptor activity, apoptosis	-
4470	UNC13B	NM_006377.2	4170	gacgggacccagctgacttca	252418	673253	see also 4469 line	
4471	UNC13B	NM_006377.2	4867	ggccgggaagatccatgtatgga	252426	673261	see also 4469 line	
4472	SEMA3C	NM_006379.2	1774	tcctctcatgtacaattccatct	310770	684531	-	-
4473	APPBP2	NM_006380.2	342	ctccgctgtctgtggacaactaca	299541	719356	-	rheumatoid arthritis(関節リウマチ)
4474	APPBP2	NM_006380.2	344	ccgctgtctgtggacaactacac	299542	719357	-	Peutz-Jeghers syndrome(ポイツ・イエガー症候)
4475	APPBP2	NM_006380.2	1200	ctgtcagctgtgtgcaattatc	299566	719385	see also 4473 line	
4476	HTATIP	NM_006388.2	924	tcgtcacccggatgaagaacatt	18572	450735	transcription_regulator or activator	-
4477	HTATIP	NM_006388.2	972	gcctcaagccgtgtactctctcc	18573	450737	see also 4476 line	
4478	IPO7	NM_006391.1	891	aagtggccctcacatttttgc	127431	530061	signal transduction	-
4479	IPO7	NM_006391.1	997	ctgtgtgtgtccagcaagttta	127435	530065	see also 4478 line	
4480	IPO7	NM_006391.1	1003	gtgtccagcaagttttatgaag	127437	530066	see also 4478 line	
4481	IPO7	NM_006391.1	1136	gcccatatcaaggcattatcc	127439	530069	see also 4478 line	
4482	IPO7	NM_006391.1	1225	acgaatatatacgcatgaagttt	127444	530070	see also 4478 line	
4483	IPO7	NM_006391.1	1925	tactgtctatgggaattctgaata	127462	530091	see also 4478 line	
4484	IPO7	NM_006391.1	3047	gactcacggctttaatgaagaac	127495	530113	see also 4478 line	
4485	NOL5A	NM_006392.2	854	ctccagctgtgtgtgtctttat	52878	676261	-	RNA binding
4486	NEDD9	NM_006403.2	2458	gccacaggacattcgcaacaagt	307478	673793	signal transduction, cell cycle	-
4487	TM9SF1	NM_006405.3	718	tccattgtgtccatcatcaac	275224	657675	-	-
4488	TM9SF1	NM_006405.3	977	tggcaactggcattatgtcattg	275229	657684	see also 4487 line	transporter
4489	TM9SF1	NM_006405.3	1384	cccagccctgtactacaagtact	275233	657694	see also 4487 line	
4490	TM9SF1	NM_006405.3	1453	ctgtggagctgtactacattttt	275234	657695	see also 4487 line	
4491	TM9SF1	NM_006405.3	1455	gtggagctgtactacattttgc	275235	657696	see also 4487 line	
4492	TM9SF1	NM_006405.3	1506	tgtactggcactctctcttttgt	275238	657697	see also 4487 line	
4493	PRDX4	NM_006406.1	360	atcgtgggaaatactgtgttttc	223674	610790	-	thioredoxin peroxidase
4494	PRDX4	NM_006406.1	792	aacctgtgtgtgaacaataatc	223685	610807	see also 4493 line	
4495	ARPC1A	NM_006409.2	1160	aagattgtgcgaattttgcaat	115320	686926	-	actin binding

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4496	HTATIP2	NM_006410.3	427	tcgtgttgaccagattatgtgc	111912	706792	transcription, regulat	-	
4497	HTATIP2	NM_006410.3	474	ctggagggtgcaaacattccaac	111914	706793	see also 4496 line	-	small cell lung cancer(肺癌)
4498	AKAP3	NM_006422.2	2577	ctgagctcaatgtccctattttg	253194	531948	kinase related	protein kinase A	-
4499	DPYSL4	NM_006426.1	1308	atgtgcacaaatctccaatttt	204799	595638	-	anchor protein	-
4500	CCT4	NM_006430.2	882	aagattggcgttattcagattttg	75475	497363	cell cycle	chaperone	-
4501	CCT4	NM_006430.2	1349	agctgagcgctccatcatgatg	75495	497380	see also 4500 line	-	-
4502	CCT4	NM_006430.2	1421	aggtggctgtccagaataagagt	75502	497382	see also 4500 line	-	-
4503	CCT4	NM_006430.2	1555	ccggcctgaatcccatcttctaca	75512	497387	see also 4500 line	-	-
4504	MAB21L2	NM_006439.3	899	agctggtttaccagctcaataag	319937	703152	-	-	-
4505	SMC2L1	NM_006444.1	3524	ttcaaacctgctccaatttat	100718	514873	-	-	-
4506	SMC2L1	NM_006444.1	3659	atgttcaacaatgcaaacgtttct	100725	514879	see also 4505 line	-	-
4507	PRPF8	NM_006445.2	1805	ggcgatgatgatcaacaataca	46589	752067	-	-	-
4508	PRPF8	NM_006445.2	3309	tacattgatcgcatccattttt	46627	752110	see also 4507 line	-	-
4509	PRPF8	NM_006445.2	4134	cccaactgtaccgctacataca	46642	752129	see also 4507 line	-	-
4510	PRPF8	NM_006445.2	4160	atggagagagagtgtoattgatt	46644	752130	see also 4507 line	-	-
4511	PRPF8	NM_006445.2	5198	aggcgagcaagcctctcacaac	46669	752153	see also 4507 line	-	-
4512	PRPF8	NM_006445.2	6000	ttagctgactacggcgaagaaaa	46687	752173	see also 4507 line	-	-
4513	PRPF8	NM_006445.2	6001	tggctgactacggcgaagaaaa	46688	752174	see also 4507 line	-	-
4514	PRPF8	NM_006445.2	6364	atgtgcttaagaagttcatctgc	46695	752189	see also 4507 line	-	-
4515	USP16	NM_006447.1	267	atctgccaaagactgtaagactga	189039	583040	cell cycle	ubiquitin-specific	-
4516	USP16	NM_006447.1	274	aagactgtaagactgtaacaataa	189040	583041	see also 4515 line	protease	-
4517	USP16	NM_006447.1	278	ctgtaagactgtaacaataaagtga	189041	583042	see also 4515 line	-	-
4518	USP16	NM_006447.1	709	cogtgaagagactcogtaatttg	189055	583055	see also 4515 line	-	-
4519	USP16	NM_006447.1	781	cagtgcttagagaactactactaaa	189057	583058	see also 4515 line	-	-
4520	USP16	NM_006447.1	788	tagagaactactactaaaagaagtga	189059	583059	see also 4515 line	-	-
4521	USP16	NM_006447.1	2306	cacccttaagttagaagtgttg	189102	583101	see also 4515 line	-	-
4522	USP16	NM_006447.1	2371	tgaacacacagtggtactactgagg	189105	583105	see also 4515 line	-	-
4523	CDC42EP3	NM_006449.3	1288	ccctcccccgggtctcaaaaatgc	120849	533422	signal transduction	-	-
4524	TBL3	NM_006453.2	407	gcctgtggaaggcgatcacacacg	253787	756016	gpcr	receptor signaling	-
4525	SC65	NM_006455.2	807	cacgagctgacggcgcaagtatct	308076	790495	-	protein	-
4526	SC65	NM_006455.2	811	agctgaacggcgaagtatctcaac	308077	790496	see also 4525 line	-	-
4527	SC65	NM_006455.2	817	ccgcaagtatctcaactactat	308079	790497	see also 4525 line	-	-
4528	SC65	NM_006455.2	818	cgcgaagtatctcaactactatc	308080	790498	see also 4525 line	-	-
4529	LJM	NM_006457.1	1785	gtgtgttgaaagtttgggaagg	125284	530668	-	-	-
4530	TRIM3	NM_006458.2	2048	accgtgggtcagcatctctcc	126467	541579	-	-	-
4531	KEO4	NM_006459.2	163	gaccaggtatcatatcatgttg	335557	756704	-	-	-
4532	KEO4	NM_006459.2	276	atctattgaccgaatagaagt	335562	756710	see also 4531 line	-	-
4533	KEO4	NM_006459.2	285	gaccgaatagaagtgtgttaatat	335563	756711	see also 4531 line	-	-
4534	KEO4	NM_006459.2	311	ggctcctatgacgtgtttgata	335565	756714	see also 4531 line	-	-
4535	KEO4	NM_006459.2	522	caggctgtgctgtttacaaacc	335570	756723	see also 4531 line	-	-

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4536	TGOLN2	NM_006464.1	1340	ggccagtgactaccacacggtttgg	323507	687960	-	-	-
4537	IVNS1ABP	NM_006469.2	561	tcccaatggatattgatgttg	132011	536024	transcription_regulat	-	-
4538	IVNS1ABP	NM_006469.2	954	ctgcattctctaccgaaatttg	132022	536047	see also 4537 line	-	-
4539	IVNS1ABP	NM_006469.2	958	atctctaccgaaattttgcaag	132023	536049	see also 4537 line	-	-
4540	IVNS1ABP	NM_006469.2	986	tggagactcccggtttgtgaat	132024	536052	see also 4537 line	-	-
4541	IVNS1ABP	NM_006469.2	987	ggagagactcccggtttgtgaat	132025	536053	see also 4537 line	-	-
4542	IVNS1ABP	NM_006469.2	989	gagactcccggtttgtgaataag	132026	536054	see also 4537 line	-	-
4543	IVNS1ABP	NM_006469.2	1087	tggagagtaagtcttgaaataa	132031	536057	see also 4537 line	-	-
4544	IVNS1ABP	NM_006469.2	1646	cagagatgaatggcaaacata	132039	536067	see also 4537 line	-	-
4545	OSF-2	NM_006475.1	856	tccacagaggtgtctctagaagg	292196	683120	-	-	-
4546	GAS2L1	NM_006478.3	859	ctgaccagtttcccatgatcaag	306279	674185	cell_cycle	-	-
4547	ERF	NM_006494.1	1073	caccacaaagctctacaactacc	3387	443466	transcription_regulat	transcription co-	-
4548	POLH	NM_006502.1	305	agcgcaaaatctctattggagg	17057	598345	or, cell_cycle	repressor	-
4549	POLH	NM_006502.1	442	aagaagttaigtccagatcttct	17060	598352	see also 4548 line	-	xeroderma pigmentosum(色素性乾皮症)
4550	RASA2	NM_006506.2	538	tgcacatgggtgctctctcaataa	297142	665773	-	RAS GTPase	-
4551	RASA2	NM_006506.2	868	ttgctacagccaagagacacatgg	297156	665784	see also 4550 line	activator	-
4552	RELB	NM_006509.2	1778	gccttggggcagcaacatgttc	10450	448116	transcription_regulat	translation	-
4553	SARS	NM_006513.2	94	ttgttccgggtggataaaggagg	54573	514398	or	regulator	-
4554	SARS	NM_006513.2	218	tccgggcagacacttgacacag	54578	514400	-	serine-tRNA ligase	-
4555	SARS	NM_006513.2	219	tccggcagacacactgaacacagc	54579	514401	see also 4553 line	-	-
4556	SON10A	NM_006514.1	984	ttctgacaccccggttttaact	152470	553539	channel	-	-
4557	SON10A	NM_006514.1	986	ctgacaccccggttttaactac	152471	553540	see also 4556 line	-	-
4558	SETMAR	NM_006515.1	683	tcctgtccgaattgactcaatgg	335720	801375	-	-	-
4559	SETMAR	NM_006515.1	687	gtccgaattgactcaatggtacc	335721	801376	see also 4558 line	-	-
4560	TFE3	NM_006521.3	1305	gtccagcgcatctcaacattaac	13259	468944	transcription_regulat	translation	renal cell carcinoma(腎臓癌), alveolar soft part
4561	TFE3	NM_006521.3	1306	tccgagcgcgattcaacattaacg	13260	468945	or	regulator	sarcoma(胞巣状軟部肉腫), renal tumour(腎腫
4562	TFE3	NM_006521.3	1309	cagcgattcaacattacacgaca	13261	468946	see also 4560 line	-	瘍), synovial sarcoma(滑膜肉腫), soft tissue
4563	GLRA3	NM_006529.1	1510	gagaagttttaccgtttctcaga	179335	572608	channel,	-	sarcoma(軟部組織肉腫)
4564	GAS41	NM_006530.2	827	agcaagtcgtgaaactataaatt	4393	725927	receptor activity	GABA-A receptor	-
4565	TG737	NM_006531.2	394	ctggatattgggtccaagacatct	314640	684824	transcription_regulat	-	glioma(グリオーマ), CNS Tumours(中枢神経腫
4566	TG737	NM_006531.2	1678	ttgcgaatgggtattatgagaag	314669	684852	-	-	瘍)
4567	NCOA3	NM_006534.2	855	tgcgcagagatatgaacaatg	112150	602551	see also 4565 line	-	-
4568	NCOA3	NM_006534.2	1032	aggtgtcaatatagatacaaat	112158	602555	transcription_regulat	-	breast cancer(乳癌), liposarcoma(脂肪肉腫)
4569	CLCA2	NM_006536.3	1468	gaggaattatcatcagcttaccagg	263088	646668	see also 4567 line	-	-
							channel	-	-

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4570	USP3	NM_006537.1	256	ggccatgcaaaaaaacattatga	189441	583511	-	ubiquitin-specific protease	-
4571	USP3	NM_006537.1	785	aaggcagccagactgcattagc	189451	583527	see also 4570 line		
4572	CACNG3	NM_006539.2	1217	gaggtatccagatgttgatcacc	261570	645235	channel	voltage-gated calcium channel	-
4573	CACNG3	NM_006539.2	1310	gaggtgtgtgcaggactaaatct	261576	645241	see also 4572 line		
4574	CACNG3	NM_006539.2	1313	gtgtgtgcaggactaaatctaca	261577	645242	see also 4572 line		
4575	CACNG3	NM_006539.2	1315	gtgtgcaggactaaatctacaag	261578	645243	see also 4572 line		
4576	CACNG3	NM_006539.2	1318	tgcaggactaaatctacaagtga	261579	645244	see also 4572 line		
4577	CACNG3	NM_006539.2	1417	tccgagggcgtgtgcaagaaat	261582	645245	see also 4572 line		
4578	CACNG3	NM_006539.2	1418	tccgagggcgtgtgcaagaaatc	261583	645246	see also 4572 line		
4579	CACNG3	NM_006539.2	1422	agggcgtgtgcaagaaatcgatc	261584	645248	see also 4572 line		
4580	CACNG3	NM_006539.2	1423	ggcgtgtgcaagaaatcgatca	261585	645249	see also 4572 line		
4581	NCOA2	NM_006540.1	1530	cactctccagggtagtaactatg	112071	525635	transcription_regulator, or,	translation regulator	-
4582	NCOA2	NM_006540.1	1542	tagtaactatgcactcaaaatga	112072	525636	see also 4581 line		
4583	NCOA2	NM_006540.1	2480	cagatctgcagtagtaacacaaa	112085	525656	see also 4581 line		
4584	NCOA2	NM_006540.1	2665	gacaagcaagccatcactcaatga	112087	525662	see also 4581 line		
4585	NCOA2	NM_006540.1	2867	tccaccactcagaacacagtagt	112091	525663	see also 4581 line		
4586	NCOA2	NM_006540.1	3609	tcccatcgaagatccaaacttc	112109	525670	see also 4581 line		
4587	TXNL2	NM_006541.1	784	atgtgattcagcaacaaatc	265935	649959	-	-	-
4588	IMP-3	NM_006547.2	426	atcgaggcgcttcaggtaaat	52210	484719	-	-	-
4589	IMP-3	NM_006547.2	936	cagaccagtgctaaatcgatgt	52229	484737	see also 4588 line		
4590	IMP-2	NM_006548.3	238	ctcgggtgaagtgaattgatgt	335749	808102	-	-	-
4591	IMP-2	NM_006548.3	624	ctcaggccagacagatgtatc	335757	808108	see also 4590 line		
4592	MTX2	NM_006554.1	465	gtccaatagtcctaattgttaaa	269454	651915	-	protein transporter	-
4593	MTX2	NM_006554.1	466	tccaatagtcctaattgttaag	269455	651916	see also 4592 line		
4594	MTX2	NM_006554.1	868	caccattctaccacacatga	269468	651926	see also 4592 line		
4595	KHDRBS3	NM_006558.1	1413	accagccatgtgcagatctga	52274	484854	-	-	-
4596	CUGBP1	NM_006560.2	185	accagatottgatgtatcaaga	50307	471169	-	RNA binding	-
4597	CUGBP1	NM_006560.2	542	tctgttgacagattgaagaat	50314	471181	see also 4596 line		
4598	CUGBP1	NM_006560.2	1340	gggagccaacctgttacttacc	50330	471193	see also 4596 line		
4599	CUGBP1	NM_006560.2	1430	tgcacaagttttcatagacaagc	50333	471199	see also 4596 line		
4600	CUGBP2	NM_006561.1	267	aaggtgtgttcgtgaacatt	50340	471212	-	-	-
4601	CUGBP2	NM_006561.1	1303	ggcaaacctctttattaccacc	50356	471230	see also 4600 line		
4602	CUGBP2	NM_006561.1	1389	ctgctaaagtcttcattgacaaa	50358	471233	see also 4600 line		
4603	CTCF	NM_006565.1	1624	gtcatagcccgaaagtgattt	2611	457516	transcription_regulator, or, cell_cycle repressor	-	-
4604	CTCF	NM_006565.1	1658	tgcgaagcagcattctctatt	2612	457518	see also 4603 line		
4605	CTCF	NM_006565.1	2324	caggtgcaattgagaacattata	2619	457530	see also 4603 line		
4606	GNA13	NM_006572.3	321	cagcaacgtgatcaaaaggatga	109070	519407	signal_transduction , gpcr	receptor signaling protein	-
4607	GNA13	NM_006572.3	702	tccttcaaaatggtgatgtag	109085	519416	see also 4606 line		
4608	MAP4K5	NM_006575.3	1266	atcattcgtcatcaccatagatc	89767	715296	kinase_related	-	-



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4609	B3GNT1	NM_006577.3	1286	aggcttcaggacattgatctg	20988	59979	-	-	-
4610	FUT9	NM_006581.2	557	atctgccaagcaatgttcaaca	21054	59970	-	-	-
4611	FUT9	NM_006581.2	791	ccgcgtgattcaagatccaag	21064	599712	see also 4610 line		
4612	FUT9	NM_006581.2	792	cgccgtgattcagatccaagt	21065	599713	see also 4610 line		
4613	RRH	NM_006583.1	803	ggcgtggtcccttatccatcg	241214	629141	gpcr, rhodopsin-like		
4614	GRN	NM_006587.2	630	tcgcctcagttgctatacaata	181759	575626	receptor activity, signal_transduction		
4615	GRN	NM_006587.2	631	cgctcagttgctatacaatat	181760	575627	receptor activity, trypsin		
4616	GRN	NM_006587.2	2472	ccctgctgcccgaatgaacaaa	181803	575664	see also 4614 line		
4617	POLD3	NM_006591.1	159	tacactagggttcattgtaacc	35771	598322	-	-	-
4618	TBR1	NM_006593.2	477	atgacgaatcagtcagatcacaga	12682	449041	transcription_regulat		
4619	TBR1	NM_006593.2	484	atcagtaagatacacagaatttt	12684	449042	or transcription factor		
4620	TBR1	NM_006593.2	572	ctctgagcttcgtcacagtttg	12687	449044	see also 4618 line		
4621	TBR1	NM_006593.2	576	gagcttcgtcacagtttgatgg	12688	449045	see also 4618 line		
4622	TBR1	NM_006593.2	1416	taccagatacaggtatatacaca	12697	449059	see also 4618 line		
4623	TBR1	NM_006593.2	2177	ctccagagactcagggatttacg	12699	449066	see also 4618 line		
4624	TBR1	NM_006593.2	2180	cagagactcagggatttacagc	12700	449067	see also 4618 line		
4625	AP4B1	NM_006594.1	280	ggctgctctacccgaatgtctac	273167	708464	-	-	-
4626	AP4B1	NM_006594.1	705	ctgctgacacaggtatccattgt	273183	708465	see also 4625 line		
4627	POLQ	NM_006596.3	1992	cagcatgatcaggtctattctgg	17162	464345	-	-	-
4628	POLQ	NM_006596.3	2542	atggccatcataaaagggttttt	17181	464364	see also 4627 line		
4629	POLQ	NM_006596.3	2543	tggccatcataaaagggttttc	17182	464365	see also 4627 line		
4630	POLQ	NM_006596.3	2544	ggccatcataaaagggttttca	17183	464366	see also 4627 line		
4631	SLC12A7	NM_006598.1	1822	ctggcgtccacggtccaagtctt	256830	640838	-	-	-
4632	SLC12A7	NM_006598.1	1824	ggcgtccacggtccaagtcttac	256831	640839	see also 4631 line		
4633	SLC12A7	NM_006598.1	1825	gcgtccacggtccaagtcttacc	256832	640840	see also 4631 line		
4634	NFAT5	NM_006599.2	1500	accgacagcaaggctatgcaagt	7393	446445	transcription_regulat		
4635	NFAT5	NM_006599.2	1537	cagccgtggggtaagtaacaga	7395	446446	or, see also 4634 line		
4636	NFAT5	NM_006599.2	1539	gcgtgggggtgaagtaacagagg	7396	446447	see also 4634 line		
4637	NFAT5	NM_006599.2	1738	aggattccctcccaacttcagt	7403	446454	see also 4634 line		
4638	NFAT5	NM_006599.2	1766	gagcaccagttccataatgata	7407	446455	see also 4634 line		
4639	NFAT5	NM_006599.2	1769	caccagttctacaatgataaca	7408	446456	see also 4634 line		
4640	NFAT5	NM_006599.2	1788	aacactgaggtacctgtataatc	7409	446457	see also 4634 line		
4641	NFAT5	NM_006599.2	1801	ctcgtaaatcacaaaagaat	7410	446458	see also 4634 line		
4642	NFAT5	NM_006599.2	1839	gggttcaaacgacagagattgga	7413	446459	see also 4634 line		
4643	NFAT5	NM_006599.2	1842	gtcaaacgacagagattggaaga	7414	446460	see also 4634 line		
4644	NFAT5	NM_006599.2	1923	cagcttaccacgacacaagaagg	7416	446463	see also 4634 line		
4645	NFAT5	NM_006599.2	2430	agcactgtgccagattggtttt	7436	446481	see also 4634 line		
4646	NFAT5	NM_006599.2	2432	cactcgtgccagattggttttc	7437	446482	see also 4634 line		
4647	NFAT5	NM_006599.2	2441	cagattggttttcagtttaata	7438	446483	see also 4634 line		
4648	NFAT5	NM_006599.2	2446	tggttttcaggttaataatcatg	7439	446484	see also 4634 line		

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4849	NFAT5	NM_006599.2	2740	atcatgaccacacataataatttg	7448	446489	see also 4634 line		
4850	NFAT5	NM_006599.2	5458	cacaggtactatttttcaaac	7513	446547	see also 4634 line		
4851	NUDC	NM_006600.2	216	agcttcttcgagcaaacaga	307525	701878	cell_cycle	-	
4852	TCFL5	NM_006602.2	728	ggcgctcaacaatttggtaact	41880	541096	transcription_regulat	-	
4853	TCFL5	NM_006602.2	1331	ggcgagaatcgcgaatttgcgtg	41892	541112	see also 4652 line	-	
4854	STAG2	NM_006603.3	633	cagaactctgagataattcgaaa	335844	673927	-	-	
4855	STAG2	NM_006603.3	1341	gtgtctatgaccttgacaaga	335862	673954	see also 4654 line	-	
4856	STAG2	NM_006603.3	1369	atgttgacagcaagaataaaa	335863	673955	see also 4654 line	-	
4857	STAG2	NM_006603.3	1452	gtctatcatctgttttattcagc	335864	673958	see also 4654 line	-	
4858	STAG2	NM_006603.3	2015	tacactggacgattgaaaaagc	335880	673975	see also 4654 line	-	
4859	STAG2	NM_006603.3	2100	ttggaagcatgttctaaactta	335885	673979	see also 4654 line	-	
4860	STAG2	NM_006603.3	2101	tggagcatgttctaaacttac	335886	673980	see also 4654 line	-	
4861	STAG2	NM_006603.3	2342	tgttgaattacaactcttga	335897	673993	see also 4654 line	-	
4862	STAG2	NM_006603.3	2541	ctgaccaactgtgaatactactgt	335904	673999	see also 4654 line	-	
4863	STAG2	NM_006603.3	2544	accacagtgataactactgttaa	335905	674000	see also 4654 line	-	
4864	STAG2	NM_006603.3	2627	aggaggcgtgacatgttagagc	335907	674005	see also 4654 line	-	
4865	STAG2	NM_006603.3	3336	ctgatgtctaccgaaattcttt	335925	674026	see also 4654 line	-	
4866	STAG2	NM_006603.3	3865	cagctcaattatggatgaatca	335940	674036	see also 4654 line	-	
4867	MAP3K2	NM_006609.2	470	aagtacacaggctactaatttag	89197	507089	kinase_related	protein serine/threonine kinase	-
4868	MAP3K2	NM_006609.2	631	ttgcccggaatgggtcactcact	89204	507099	see also 4667 line	-	
4869	MAP3K2	NM_006609.2	633	gcccggaatgggtcactcactag	89205	507100	see also 4667 line	-	
4870	MAP3K2	NM_006609.2	634	cccgggaatgggtcactcactagt	89206	507101	see also 4667 line	-	
4871	MAP3K2	NM_006609.2	1287	gagaccagcaagggaagtaaatgc	89231	507117	see also 4667 line	-	
4872	MAP3K2	NM_006609.2	1348	atgagcgaattgttcagattat	89233	507120	see also 4667 line	-	
4873	MAP3K2	NM_006609.2	1424	gccaggagggttcaattaggacc	89237	507121	see also 4667 line	-	
4874	MAP3K2	NM_006609.2	1881	ttctcaaacgagttttttaga	89244	507135	see also 4667 line	-	
4875	MAP3K2	NM_006609.2	1937	aaggcacatgtttgtgcattatc	89245	507136	see also 4667 line	-	
4876	CHL1	NM_006614.2	1386	gagaaacctcaaccacacatcaag	317600	677689	signal_transduction	-	-
4877	CHL1	NM_006614.2	2487	ctcaaccacaggaatgattata	317643	677725	see also 4676 line	-	-
4878	CHL1	NM_006614.2	3086	aaggtcatcaaatgtgataaaga	317662	677748	see also 4676 line	-	-
4879	PLU-1	NM_006618.2	1294	cgcgagacccttcgctttcatcc	9488	767571	transcription_regulat	-	-
4880	HBS1L	NM_006620.2	666	ttgtgccaaaagtgtctaaaatg	57613	477638	or	-	-
4881	HBS1L	NM_006620.2	983	gtggtcatgtgtcatgttgatgc	57620	477645	signal_transduction	-	-
4882	AHCYL1	NM_006621.3	1244	ctgccgagaaatccattttggatg	204262	594641	see also 4680 line	adenosylhomocysteinase	-
4883	SNK	NM_006622.1	1171	tgcataaggaaggaagcaaggtatc	100958	767335	kinase_related, cell_cycle	protein serine/threonine kinase	-

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[illegible]

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4717	FGL2	NM_006882.1	909	gaccaagagtaaggaatgatttc	329296	677588	see also 4716 line	
4718	FGL2	NM_006882.1	910	accacagagtaaggaatgatttc	329297	677589	see also 4716 line	
4719	FGL2	NM_006882.1	1230	agggtgcgtaatggattttct	329314	677600	see also 4716 line	
4720	FGL2	NM_006882.1	1232	gtgtcgtgaatggattttctgg	329315	677601	see also 4716 line	
4721	ACTL7A	NM_006887.2	947	tcctctgctcggagatgttttc	286237	659082	-	
4722	ORF	NM_006888.3	684	caccaacttagcaacaactacg	278825	688737	molecular_function unknown	
4723	MMP24	NM_006890.2	336	ctccactatgcagcagttttacg	158318	558900	zinc binding	
4724	MMP24	NM_006890.2	619	gtgcacatcaccatgagatcaaac	158326	558905	see also 4723 line	
4725	MMP24	NM_006890.2	1628	gggactactggaagtttgacac	158334	558912	see also 4723 line	
4726	CPSF4	NM_006893.1	526	ttcatgcacctcctgattgaact	58903	482196	-	
4727	BRD8	NM_006896.3	2109	aagaagaatcagggaactatttt	1606	634333	transcription_regulat or	
4728	BRD8	NM_006896.3	2195	agcctagaggagcctaaaggaga	1607	634334	see also 4727 line	
4729	BRD8	NM_006896.3	2715	cgcatgtgattatcaaacatcc	1620	634345	see also 4727 line	
4730	SUGT1	NM_006704.2	986	aactggtctgtagtagtaaaag	307560	725349	cell_cycle	
4731	TCERG1	NM_006706.2	343	tcctcctcggggtatgatgttc	112492	708482	transcription_regulat or	
4732	TCERG1	NM_006706.2	442	aactccagatgggaaggatttt	112496	708483	see also 4731 line	
4733	TCERG1	NM_006706.2	1178	agctgcacgtatgaagacacagt	112510	708496	see also 4731 line	
4734	ASK	NM_006716.2	1274	aaccagtatcaagttgttgatga	58077	481017	kinase_related	Alzheimer disease(アルツハイマー病)
4735	LRBA	NM_006726.1	1022	agcaaaaggtctggctattctgc	281555	688224	molecular_function unknown	
4736	LRBA	NM_006726.1	2709	ttgcgacctactctcgaaattct	281620	688291	see also 4735 line	
4737	LRBA	NM_006726.1	2711	cgcaacctactctgaaattctcc	281621	688292	see also 4735 line	
4738	LRBA	NM_006726.1	2933	ctgctttaccatgcagtcacaata	281626	688300	see also 4735 line	
4739	LRBA	NM_006726.1	4263	cagttatgacacttgatgaatagc	281655	688332	see also 4735 line	
4740	LRBA	NM_006726.1	4274	ttcgtgaatagcagtgataatgt	281656	688333	see also 4735 line	
4741	LRBA	NM_006726.1	6036	atgagaagatgtgtgatactttg	281710	688360	see also 4735 line	
4742	LRBA	NM_006726.1	7356	ttgcaactcaataatataaat	281761	688410	see also 4735 line	
4743	LRBA	NM_006726.1	7949	gtgaaatcgatcctctcatagc	281774	688424	see also 4735 line	
4744	LRBA	NM_006726.1	8736	acgaccagagtgatcatattct	281789	688436	see also 4735 line	
4745	DIAPH2	NM_006729.2	513	gtcgtgaccgaattacaagttt	116558	521554	-	premature ovarian failure(早発閉経)
4746	DIAPH2	NM_006729.2	514	tgctgaccgaattacaagttt	116559	521555	see also 4745 line	
4747	DIAPH2	NM_006729.2	515	gcgtgaccgaattacaagttta	116560	521556	see also 4745 line	
4748	DIAPH2	NM_006729.2	757	gtgagatgtgtccagatatt	116570	521565	see also 4745 line	
4749	DIAPH2	NM_006729.2	3062	aagcaaaagtttcagctcaaatc	116639	521628	see also 4745 line	
4750	FCMD	NM_006731.1	267	cacacagtgccgtgcagttaaa	319895	687772	-	muscular dystrophy(筋ジストロフィ)
4751	FCMD	NM_006731.1	487	tgtttcgatagatcgagaatat	319900	687781	see also 4750 line	
4752	FCMD	NM_006731.1	721	aagtacagtttgctgttatcc	319911	687790	see also 4750 line	
4753	FSHPRH1	NM_006733.1	747	accaagatctttttatctgtg	320326	758330	-	
4754	FSHPRH1	NM_006733.1	903	gagaatgtaaacacatttcgtg	320327	758342	see also 4753 line	
4755	FSHPRH1	NM_006733.1	2418	agctggtatttggaactatttt	320354	758392	see also 4753 line	

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4756	HIVEP2	NM_006734.2	194	cagctctaggacaaaaagctacc	336155	701028	transcription_regulat	DNA binding	-
4757	HIVEP2	NM_006734.2	1781	tagactcttcacccctattaga	336198	701073	see also 4756 line		
4758	HOXA2	NM_006735.3	282	tacgaatttgacgagagattgg	5037	444699	transcription_regulat	transcription factor	-
4759	HOXA2	NM_006735.3	349	ttcccccgtcgtcgtacattt	5038	444701	see also 4758 line		
4760	HOXA2	NM_006735.3	350	tcacctgtcgtcgtacattt	5039	444702	see also 4758 line		
4761	HOXA2	NM_006735.3	1190	tggagctggcctaacaatgaca	5046	444711	see also 4758 line		
4762	MCM5	NM_006739.2	252	atgaactcaagcggcattacaac	31908	461512	phosphatase, cell_cycle, transcription_regulat	DNA dependent adenosinetriphosph	-
4763	PPP1R1A	NM_006741.2	372	tccacggcaacggaagaagatga	294204	664349	phosphatase, signal_transduction	type 1 serine/threonine specific protein phosphatase inhibitor	-
4764	PSKH1	NM_006742.1	204	agcccttcagtgacacaaagagt	98263	501062	kinase_related	protein kinase CK2	-
4765	SNTB2	NM_006750.2	610	tcggagaagtaaacaccatatac	119001	523809	-	-	-
4766	SNTB2	NM_006750.2	611	ccgagaagtaaacaccatataca	119002	523810	see also 4765 line		
4767	SNTB2	NM_006750.2	899	agctatcacacacacacataatgg	119008	523816	see also 4765 line		
4768	UGP2	NM_006759.2	85	atgtcgagattgtacaagatct	209034	449742	kinase_related	kinase	-
4769	UGP2	NM_006759.2	248	tggatggatttcggaagctattt	209038	449746	see also 4768 line		
4770	UGP2	NM_006759.2	1356	tctcaagtgcccttggttaaat	209075	449795	see also 4768 line		
4771	N33	NM_006765.2	1087	atggggatgggttcttctaaga	265525	742078	-	prostate cancer(前立腺癌)	-
4772	LZTR1	NM_006767.1	2344	aacgcagcactgacacatgaagc	336315	506701	-	-	-
4773	BRAP	NM_006768.2	655	gaccagtcagcactttagaagt	177024	733323	-	-	Alzheimer disease(アルツハイマー病)
4774	BRAP	NM_006768.2	658	cagtcagcactttagaagttg	177025	733324	see also 4773 line		
4775	LMO4	NM_006769.2	1154	gagatcgggtttcactacatacat	6213	445404	-	transcription factor	-
4776	ZNF-kaiso	NM_006777.2	1447	cactatgagtgtaataagtagatgg	137230	535002	-	-	-
4777	ZNF-kaiso	NM_006777.2	1977	tggcagtagtgagttgaattta	137254	535017	see also 4776 line		
4778	TRIM10	NM_006778.2	842	agcactctaataagatggaac	160242	541542	-	-	-
4779	MALT1	NM_006785.2	1544	atgctccaatccatataagttct	133773	581304	apoptosis, signal_transduction	-	non-hodgkin lymphoma(非ホジキンリンパ腫)、 lymphoma(リンパ腫)
4780	MALT1	NM_006785.2	1995	gtgggccaaggctcatgaattc	133781	581315	see also 4779 line		
4781	TTID	NM_006790.1	1647	ttcgacacacattcagcaaatat	289504	711795	-	-	-
4782	SF3A3	NM_006802.1	174	aacctgaggatttgatgatga	46813	486183	-	pre-mRNA splicing factor	-
4783	AP3M2	NM_006803.2	387	gagcagtagataaagacaatgt	267805	672960	-	protein transporter	-
4784	STARD3	NM_006804.2	517	cagtgattcctcattgtcaagg	173826	570503	-	lipid binding	-
4785	PDIR	NM_006810.1	894	cacctgaccgatgaagacttga	224706	620013	-	protein disulfide isomerase	-
4786	TDE1	NM_006811.2	526	atgggttttggtttctcaaat	327575	693322	-	-	-

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4787	STP1	NM_006819.1	1338	accttcatcaagggttatcacg	314140	706499	-	-	breast cancer(乳癌)
4788	COPS6	NM_006833.4	307	caccgtgaagagagattatca	56229	476404	-	-	
4789	COPS6	NM_006833.4	386	ctgagttctgggttggtatcac	56230	476407	see also 4788 line		
4790	COPS6	NM_006833.4	387	tggagttctgggttggtatcac	56231	476408	see also 4788 line		
4791	COPS5	NM_006837.2	400	gagtatcgatgaatctacaat	56190	704950	-	-	
4792	COPS5	NM_006837.2	905	gagtcacaaactctgatgaag	56205	704971	see also 4791 line		
4793	COPS5	NM_006837.2	996	atgccttagaagctctcatattc	56210	704978	see also 4791 line		
4794	IMMT	NM_006839.1	2272	aagcccggaatgacccctagaacg	336462	740186	-	-	
4795	IMMT	NM_006839.1	2325	gccagcgctgtaggaataggaac	336467	740189	see also 4794 line	kinase, related,	
4796	TLK2	NM_006852.1	371	aggcactctactaggaggacataaaa	336474	516557	cell cycle	-	
4797	TLK2	NM_006852.1	372	ggcactctctaggaggacataaaa	336475	516558	see also 4796 line		
4798	TLK2	NM_006852.1	1987	gtgctgtactatttggtatttta	336482	516598	see also 4796 line		
4799	TLK2	NM_006852.1	2187	ttccgccaagccagtagtaaac	336485	516605	see also 4796 line		
4800	TLK2	NM_006852.1	2188	tcacgcaaaagccagtagtaaca	336486	516606	see also 4796 line		
4801	TLK2	NM_006852.1	2190	ccgccaagccagtagtaacacc	336487	516607	see also 4796 line		
4802	ATF7	NM_006856.1	253	aacgcactactccaactagattcc	1155	759805	transcription_regulat	translation	regulator
4803	ATF7	NM_006856.1	1211	cagaaacttcagctgagtaatga	1164	759823	see also 4802 line		
4804	RY1	NM_006857.1	438	caggcagctacatgaatcgaaag	65645	717748	-	-	
4805	RY1	NM_006857.1	439	aggcagctacatgaatcgaaag	65646	717749	see also 4804 line		
4806	RAB35	NM_006861.4	391	cggggtcattgtggtttacacg	110212	812221	signal_transduction	protein transporter	
4807	RAB31	NM_006868.2	272	gccttggaaatgaacttcaca	110136	518080	signal_transduction	RAB small	
4808	CENTA1	NM_006869.1	1056	cgcccgaggaggagcttctatg	23967	453697	signal_transduction	monomeric	
4809	CENTA1	NM_006869.1	1057	gcccggaggaggagcttctatg	23968	453698	see also 4808 line		
4810	ELF2	NM_006874.1	240	aagccctgtcttcataatgaatct	3058	443249	transcription_regulat	-	
4811	ELF2	NM_006874.1	784	aggacagaggctgttatcatcagt	3077	443270	see also 4810 line		
4812	SHOX2	NM_006884.1	40	cggcgttctgtctccaagctttt	11207	448380	transcription_regulat	transcription factor	
4813	ATBF1	NM_006885.2	1239	cogtaccgcgcagatcatcaac	48	441838	or	translation	regulator
4814	ATBF1	NM_006885.2	1276	ctcatctctcggaatggtttg	49	441839	see also 4813 line		
4815	ATBF1	NM_006885.2	1433	tcctgctatccaaagatgttc	53	441842	see also 4813 line		
4816	ATBF1	NM_006885.2	2824	gagtcacacgtgtgtgtacaagc	74	441862	see also 4813 line		
4817	ATBF1	NM_006885.2	2850	tcctgtcgaggtgtgttaactac	75	441863	see also 4813 line		
4818	ATBF1	NM_006885.2	9551	gtcctaagctgctgttaatga	177	441921	see also 4813 line		
4819	ATBF1	NM_006885.2	9786	ctgtactgacctatcttttcc	179	441927	see also 4813 line		
4820	ATBF1	NM_006885.2	11366	gccaagagcccttagttatt	196	441941	see also 4813 line		
4821	ATBF1	NM_006885.2	11372	gagcaccctagtattacotca	197	441942	see also 4813 line		
4822	ATBF1	NM_006885.2	11760	taggaacggcacaccttcagattg	198	441944	see also 4813 line		
4823	DNMT3B	NM_006892.3	1001	acctgtgtgggaaagatcaag	25461	458606	-	-	
4824	DNMT3B	NM_006892.3	1163	ggctgttcaggccagcaacttaat	25464	458608	see also 4823 line		

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4825	FMO3	NM_006894.3	1203	ccgcgtggcagcacaagtaata	221322	608295	-	electron transfer flavoprotein	trimethylaminuria(トリメチルアミン尿症)
4826	HNMT	NM_006895.1	657	gtggactttattcatatgattc	214275	604599	-	histamine N- methyltransferase	asthma(喘息)
4827	HOXA7	NM_006896.2	151	gtgaacgcgcttttttagcaata	5080	444737	transcription_regulat or	transcription factor	-
4828	HOXA7	NM_006896.2	155	acgcgcttttttagcaaatatag	5082	444738	see also 4827 line	transcription_regulat or	-
4829	HOXC9	NM_006897.1	139	ctcatctctcacgacaatgaaga	5197	444835	or	transcriptional activator	-
4830	HOXC9	NM_006897.1	226	gtgcggactgttagcgattttcc	5198	444836	see also 4829 line	-	-
4831	HOXC9	NM_006897.1	501	cgcgacttaccgggactacatgt	5200	444838	see also 4829 line	-	-
4832	IDH3B	NM_006899.2	463	atgactcggcacacaactctaga	220218	607484	-	-	-
4833	IDH3B	NM_006899.2	465	gactcggcacacaactctagacc	220219	607485	see also 4832 line	-	-
4834	MYO9A	NM_006901.1	6771	ctctccggaactcatctcaatcc	93720	679853	-	-	-
4835	MYO9A	NM_006901.1	6776	ccgaactcatctcaatacactgg	93721	679855	see also 4834 line	-	-
4836	MYO9A	NM_006901.1	6832	tgcagggaagcactaatcgaatg	93726	679857	see also 4834 line	-	-
4837	MYO9A	NM_006901.1	6847	atcgaatgtctgctaattgctttg	93727	679858	see also 4834 line	-	-
4838	PRRX1	NM_006902.2	1117	ccctgcaggcgaaaaaagaacttc	9996	447983	transcription_regulat or	-	-
4839	PRRX1	NM_006902.2	1707	agccgatgtgctacttattctgc	10005	447993	see also 4838 line	-	-
4840	PRRX1	NM_006902.2	1797	aaggccaaggaataatagtttaca	10007	447997	see also 4838 line	-	-
4841	PPA2	NM_006903.3	266	cacgaatgatgaatagagaat	166554	585759	phosphatase	-	-
4842	PRKDC	NM_006904.6	3112	gaccctgtgacagactactttaag	205670	596484	kinase_related	protein kinase CK2	agamaglobulinemia(無γ-グロブリン血症)、 severe combined immunodeficiency disease(重 症複合型免疫不全症)
4843	PRKDC	NM_006904.6	5594	atgcctattgatgtgtgaagtc	205747	596561	see also 4842 line	-	-
4844	PRKDC	NM_006904.6	6680	atgaagtgttagcaaatogattg	205771	596601	see also 4842 line	-	-
4845	PRKDC	NM_006904.6	6685	gtgttagcaaatcgtgtgcttaa	205772	596602	see also 4842 line	-	-
4846	PRKDC	NM_006904.6	7787	tcgagcatctctctgcagaatgc	205810	596643	see also 4842 line	-	-
4847	RASGRF2	NM_006909.1	430	atgcagaagtacattcatctagt	296504	664876	-	-	-
4848	RBBP6	NM_006910.4	3251	cagaggccaagagccgcgaattacc	135012	465522	cell_cycle	-	-
4849	RORB	NM_006914.2	1157	ccgtaccacaactgtttacctat	10778	448156	or	steroid hormone receptor	-
4850	RORB	NM_006914.2	1518	ccgtgccttcaaccatttaaca	10786	448170	see also 4849 line	-	-
4851	RORB	NM_006914.2	1520	gtgccttcaaccatttaacaac	10787	448171	see also 4849 line	-	-
4852	RP2	NM_006915.1	301	tggactgaaggatgaacacagtag	99703	514180	kinase_related	protein binding	-
4853	SFRS1	NM_006924.3	568	gtgaggtttgtacgaaagaaga	46983	486244	-	pre-mRNA splicing factor	-
4854	SFRS1	NM_006924.3	600	tgcagttcgaaacttgataaca	46987	486248	see also 4853 line	-	-
4855	SFRS1	NM_006924.3	602	cagttcgaaacttgataaacact	46988	486249	see also 4853 line	-	-
4856	SFRS1	NM_006924.3	605	ttcgaaacttgataaacactaag	46989	486250	see also 4853 line	-	-
4857	SFRS1	NM_006924.3	606	tcgaaacttgataaacactaagt	46990	486251	see also 4853 line	-	-
4858	SFRS1	NM_006924.3	652	gcctacatccgggttaagtga	46992	486252	see also 4853 line	-	-
4859	SILV	NM_006928.2	1462	gacattgtccagggtattgaag	303256	671730	-	-	-

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4860	SKIV2L	NM_006929.3	2348	tggcctggtcaagggtcttcttgg	54817	486311	-	ATP dependent RNA helicase	-
4861	SLC6A9	NM_006934.1	338	gggcaaccagatcgagttgtac	255776	640181	-	sodium:amino acid transporter	-
4862	SLC6A9	NM_006934.1	339	ggcaaccagatcgagttgtact	255777	640182	see also 4861 line		
4863	SLC6A9	NM_006934.1	545	gagatcagcccccctgttcaaaag	255778	640185	see also 4861 line		
4864	SLC6A9	NM_006934.1	546	aggatcagcccccctgttcaaaag	255779	640186	see also 4861 line		
4865	SYN1	NM_006950.2	1200	tggcacgctctcagagattttt	336634	524607	-	-	-
4866	SYN1	NM_006950.2	1202	gacacgtctcagagatttttgg	336635	524608	see also 4865 line		
4867	TAF5	NM_006951.2	869	atctagctcttaccacaaaggaaac	12575	795205	transcription_regulat or	-	-
4868	TAF5	NM_006951.2	1555	cagatcttagtcttatagacaaa	12595	795226	see also 4867 line		
4869	TAF5	NM_006951.2	2200	tggcatcaggttcaatgataat	12621	795249	see also 4867 line		
4870	TAF5	NM_006951.2	2346	accacacacacacagttgtaca	12625	795258	see also 4867 line		
4871	ZNF183	NM_006978.1	922	gaggtcgtctatggtgtctatga	67370	479244	-	nucleic acid binding	-
4872	ZNF183	NM_006978.1	924	gggtcgctatggtgtctatgagg	67371	479245	see also 4871 line		
4873	SLC39A7	NM_006979.1	1298	tgctgacttggcacacaaacttca	267133	654338	-	heavy metal ion transporter	-
4874	NR4A3	NM_006981.2	1930	goccttgcagagctttaacaga	8661	447340	transcription_regulat or	-	extraskelatal myxoid chondrosarcoma(骨外性粘 液性軟骨腫)、chondrosarcoma(軟骨肉腫)
4875	NR4A3	NM_006981.2	1953	ctcaacacccagagatctgtatt	8662	447341	see also 4874 line		
4876	NR4A3	NM_006981.2	2182	aggtcaacactgtgaagataa	8666	447348	see also 4874 line		
4877	NR4A3	NM_006981.2	2300	tgcagagcctgaacotttgatc	8676	447355	see also 4874 line		
4878	CART1	NM_006982.1	1104	gagcacacccgcaaatattctatg	1962	442530	transcription_regulat or	transcription factor	-
4879	CART1	NM_006982.1	1105	agcacacccgcaaatattctatg	1963	442531	see also 4878 line		
4880	ADAMTS1	NM_006988.2	2347	atcgcatcatgagactocaaag	155214	556277	signal_transduction	zinc binding	-
4881	SLC19A2	NM_006996.1	1351	ctgattgctgctgagtgatat	179718	573018	-	thiamin transporter	megablastic anemia(巨赤芽球性貧血)
4882	SLC19A2	NM_006996.1	1396	tgggtgtgctatgcatctctatg	179721	573019	see also 4881 line		
4883	TACC2	NM_006997.1	189	gagtcacacgcccctgtcaagc	322198	686736	-	-	-
4884	TACC2	NM_006997.1	686	taccottaagcgaaactaaaaac	322206	686746	see also 4883 line		
4885	TACC2	NM_006997.1	687	acccttaagcgaaactaaaaac	322207	686747	see also 4883 line		
4886	TACC2	NM_006997.1	1110	aggtctgagtttgactattctga	322212	686751	see also 4883 line		
4887	POLS	NM_006999.2	75	aggttgtaaacaggatcgaaact	36442	813358	-	-	-
4888	TLE4	NM_007005.3	919	tccgtgctgctgattgaagga	284757	526109	-	-	-
4889	TLE4	NM_007005.3	1801	accctactcacgaactgatgc	284773	526123	see also 4888 line		
4890	DDX52	NM_007010.2	529	agcaacttgcacaggaataaaa	59435	483376	-	-	-
4891	DDX52	NM_007010.2	1239	ctggccatgagagaactgttaa	59451	483397	see also 4890 line		
4892	WWP2	NM_007014.3	1333	aggacaaatggacgggtgtattac	336761	614950	-	-	-
4893	SOX30	NM_007017.2	1244	tactggagccttctgtaaaatt	40601	467943	transcription_regulat or	-	-
4894	SOX30	NM_007017.2	1398	accagcactagccaaagtaacc	40605	467946	see also 4893 line		
4895	SOX30	NM_007017.2	1588	ttccctctaagtgtttccaatgt	40608	467950	see also 4893 line		
4896	SOX30	NM_007017.2	1614	ttcttgtaaccacagaaatca	40609	467952	see also 4893 line		



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4897	CEP1	NM_007018.3	477	tacgtgaactcaacttatcatat	275589	741261	-	-	-
4898	CEP1	NM_007018.3	478	acgtgaactcaacttatcatata	275590	741262	see also 4897 line		
4899	CEP1	NM_007018.3	480	gtgaactcaacttatcatataac	275591	741263	see also 4897 line		
4900	CEP1	NM_007018.3	1144	tccatcagagatctctgaaattg	275608	741282	see also 4897 line		
4901	CEP1	NM_007018.3	1517	aagcaggttgagtggttagactaca	275616	741291	see also 4897 line		
4902	CEP1	NM_007018.3	2057	gagctgcagagctgagaaagtc	275635	704002	see also 4897 line		
4903	CGEF2	NM_007023.1	151	tggatgcgcctgcctggataaaag	336786	531339	kinase_related, signal_transduction	-	-
4904	CGEF2	NM_007023.1	363	agggcttggatgttaaaagtat	336797	531354	see also 4903 line		
4905	CGEF2	NM_007023.1	473	cccgccatgcaaccatcgttaac	336798	531355	see also 4903 line		
4906	CGEF2	NM_007023.1	601	atggaacgggctctaaacaatga	336800	531359	see also 4903 line		
4907	CGEF2	NM_007023.1	1491	ggcgaatacagtcagacttaaaag	336822	531376	see also 4903 line		
4908	CGEF2	NM_007023.1	1492	gcgaatacagtcagacttaaaag	336823	531377	see also 4903 line		
4909	CGEF2	NM_007023.1	1585	cagctcagcaaaaagtatactgt	336824	531379	see also 4903 line		
4910	CGEF2	NM_007023.1	2302	acgcgcctcaccattataggacg	336841	531397	see also 4903 line		
4911	CGEF2	NM_007023.1	2503	cacacatttggaaaggcataattt	336849	531402	see also 4903 line		
4912	CGEF2	NM_007023.1	2505	cacatttggaaaggcataattt	336850	531403	see also 4903 line		
4913	CGEF2	NM_007023.1	2742	ggcactaacgtggagaaaactgc	336860	531409	see also 4903 line		
4914	CGEF2	NM_007023.1	2914	gagggaaacaagaagcttcatga	336866	531416	see also 4903 line		
4915	CGEF2	NM_007023.1	2920	aacagaagcttcatgacaattct	336868	531417	see also 4903 line		
4916	CGEF2	NM_007023.1	3049	caggatctcggagttatgtacg	336876	531422	see also 4903 line		
4917	CGEF2	NM_007023.1	3058	cggagttatgtacggcaataaa	336877	531423	see also 4903 line		
4918	CGEF2	NM_007023.1	3060	gagttatgtacggcaataaatg	336878	531424	see also 4903 line		
4919	TOPBP1	NM_007027.2	484	acgagatacagagaaacttaattg	126343	620033	-	-	-
4920	TOPBP1	NM_007027.2	518	caccttatgtcaggagaaagtgg	126345	620035	see also 4919 line		
4921	HRHFB21	NM_007032.3	177	gagcccgatctgtcacaacttca	114044	751771	-	myosin II binding	-
4922	HRHFB21	NM_007032.3	179	cgcgcgatctgtcacaacttcaag	114045	751772	see also 4921 line		
4923	DNAJB4	NM_007034.3	691	cggatgaagatttctcgaanaag	299044	688209	-	heat shock protein	-
4924	ADAMTS5	NM_007038.1	1267	cagacgttgggaccatattgtct	155606	556405	-	zinc binding	-
4925	ADAMTS5	NM_007038.1	1269	gacgttgggaccatattgtcttc	155607	556406	see also 4924 line		
4926	ADAMTS5	NM_007038.1	2033	tggctatcagttgtatgcanaag	155621	556420	see also 4924 line		
4927	PTPN21	NM_007039.2	670	aggagattaccaggtatcagtat	193547	586953	phosphatase	structural molecule	-
4928	PTPN21	NM_007039.2	3341	aaggagaaagagctttaggtact	193580	587002	see also 4927 line		
4929	PTPN21	NM_007039.2	3391	ctgtcaccttatggaaaggtttaag	193581	587003	see also 4927 line		
4930	ATE1	NM_007041.1	1522	atcatccttaccggtgtttataa	216113	603452	-	arginyltransferase	-
4931	ATE1	NM_007041.1	1526	tgccttaccggtgtttataaaga	216114	603453	see also 4930 line		
4932	ATE1	NM_007041.1	1527	gccttaccggtgtttataaagaac	216115	603454	see also 4930 line		
4933	KATNA1	NM_007044.2	161	atctgtactcagtcagaagataca	86320	504812	-	-	-
4934	PTPRT	NM_007050.3	4163	cggccacagggatggtttatcgtat	194988	588039	phosphatase, receptor activity, signal_transduction, kinase_related	-	-

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4935	PTPRT	NM_007050.3	4164	ggccacagagtggttatctgtata	194989	588040	see also 4934 line		
4936	FAF1	NM_007051.2	696	ttcagcgtttgacctgtatgc	279805	677174	apoptosis	-	
4937	FAF1	NM_007051.2	717	gccatccaggcagatgtgaaa	279806	677176	see also 4936 line		
4938	FAF1	NM_007051.2	1818	gggaagcgatctctaatgaag	279826	677216	see also 4936 line		
4939	NOX1	NM_007052.3	1652	tggctatcgagcattaaacttgc	223260	610237	channel	-	
4940	RPC155	NM_007055.2	1208	gaccocacacctccgagtgatga	38672	808656	transcription_regulat	-	
4941	RPC155	NM_007055.2	1240	gccagttcatgtggccaaatctc	38674	808658	see also 4940 line	-	
4942	KPTN	NM_007059.1	200	accaagacctccgacagaaaatc	117887	747616	-	-	
4943	TBC1D8	NM_007063.2	2126	caggttcttagatcacattgaag	309052	707368	-	-	
4944	TRAD	NM_007064.1	3624	cggggttctgacatatgtcatgc	102932	501241	kinase_related	-	
4945	JM5	NM_007075.1	452	gcgcattgcgcacatgacaagatcg	336932	772541	-	-	
4946	NUDT6	NM_007083.3	508	tgggtgtacaagatcgaaataaa	169397	770508	-	-	
4947	WDHD1	NM_007086.1	438	aggacatgatgccccgtgttttaa	43287	457784	transcription_regulat	-	
4948	WDHD1	NM_007086.1	2384	tggaaacttgctgatctaatgact	43352	457852	see also 4947 line	-	
4949	WDHD1	NM_007086.1	2439	ttctcgctctcggaaataataac	43356	457857	see also 4947 line	-	
4950	WDHD1	NM_007086.1	2955	ggcatctgcagcatcctcttccc	43376	457873	see also 4947 line	-	
4951	NDUFV1	NM_007103.2	136	gacacgacagcaccacagaataac	222915	610147	NADH dehydrogenase (ubiquinone)	-	Leigh syndrome(リ)一症候群)
4952	SSR3	NM_007107.2	430	aagaatgaagttgctgattatga	177258	721925	signal sequence	-	
4953	TEP1	NM_007110.3	1718	tcgcacagttccattcagatttc	55414	699062	receptor	-	
4954	TEP1	NM_007110.3	3106	ctgcacagctctcctctacttc	55447	699091	-	-	neuroblastoma(神経芽細胞腫)
4955	TEP1	NM_007110.3	7754	ttcgaaggacagagatgttaagc	55512	699143	see also 4953 line	-	
4956	USF1	NM_007122.2	591	tggtaattctttgtgatgatgt	43241	470168	transcription_regulat	-	
4957	USH2A	NM_007123.3	1191	aagaatgcaagattttcgattat	292573	662357	or	-	USF43/USF44 complex
4958	VIL1	NM_007127.1	2168	atcccttcaagtggagtaaacacc	114926	524894	-	-	retinitis pigmentosa(色素性網膜炎)、Senear-Usher syndrome(セニアー・アシャー一症候群)
4959	VIL1	NM_007127.1	2178	gtggagtaacacacaaatctatg	114927	524895	structural constituent of cytoskeleton	-	
4960	ZNF184	NM_007149.1	1050	gagtgaaaaccttataaacaccac	44362	807797	zinc binding	-	
4961	D1S155E	NM_007158.2	1035	gtgatgtgttaaaagagatattc	24691	457739	transcription_regulat	-	
4962	SLMAP	NM_007159.1	347	gccagagagctagctagaacaag	312457	693228	or	-	Alzheimer disease(アルツハイマー病)
4963	SLMAP	NM_007159.1	348	cccagagagctagctagaacaagt	312458	693229	-	-	
4964	SLMAP	NM_007159.1	418	agcctatcgaaatcaagttgagg	312461	693232	see also 4962 line	-	
4965	SLC14A2	NM_007163.2	1404	ctcggagaagtttagactactact	163849	561181	-	-	urea transporter
4966	PICALM	NM_007166.1	555	ttcatcacagacagttgcatttg	302707	761141	-	-	
4967	PICALM	NM_007166.1	834	atgcaagaaggcttgcacatct	302713	761155	see also 4966 line	-	
4968	PICALM	NM_007166.1	1436	atgatgccattcccaagcttaaat	302728	761178	see also 4966 line	-	

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4969	PICALM	NM_007166.1	1587	ccttcagctggccttaattgtg	302732	761184	see also 4966 line	
4970	PICALM	NM_007166.1	1965	aggcatgataggataggaaattc	302738	761203	see also 4966 line	
4971	ABCA8	NM_007168.1	2990	atggctacttggaaatgttaaa	69298	491492	-	-
4972	ABCA8	NM_007168.1	2991	tggctacttggaaatgggttaaac	69299	491493	see also 4971 line	
4973	POMT1	NM_007171.2	1463	ctcctgctacattgactataaca	337000	600314	-	Walker-Warburg syndrome(ウォーカー・ワーズブルグ症候群)
4974	POMT1	NM_007171.2	2374	aggcccttcgctggaagacagc	337011	600328	see also 4973 line	
4975	CIT	NM_007174.1	1195	ctgacgatgacacctccaatttt	77012	498318	kinase_related	-
4976	CIT	NM_007174.1	1197	gacgatgacacctccaatttga	77013	498319	see also 4975 line	
4977	CIT	NM_007174.1	1219	atgaaccagagaagaattcgtgg	77015	498320	see also 4975 line	
4978	CIT	NM_007174.1	1461	caggaaatgacccgggttacatcg	77022	498325	see also 4975 line	
4979	CIT	NM_007174.1	3810	caggttctctcgagatacaatga	77059	498349	see also 4975 line	
4980	CIT	NM_007174.1	4207	ttggacgccaggcatcaaatgt	77065	498353	see also 4975 line	
4981	CIT	NM_007174.1	4888	ggctctacgccctgaatgcttg	77086	498370	see also 4975 line	
4982	C14orf1	NM_007176.1	147	gagcttcgagaccacacttttc	277438	667515	molecular_function	unknown
4983	C14orf1	NM_007176.1	148	agcttcgagaccacacttttct	277439	667516	see also 4982 line	
4984	C14orf1	NM_007176.1	189	tgccaagcccaaaccttgaatg	277442	667518	see also 4982 line	
4985	PKP3	NM_007183.1	1223	tgccatcgcaacctcatctacg	292246	709196	structural_molecule	-
4986	WBP4	NM_007187.3	239	aaggatcagtgagattaaacaga	55728	475958	-	-
4987	WIF1	NM_007191.2	970	tggaggtaaatgcatggttaaaa	206349	596785	kinase_related,	
4988	WIF1	NM_007191.2	972	ggggttaaatgcatggttaaaagc	206350	596786	signal_transduction	structural_molecule
4989	WIF1	NM_007191.2	1226	cgggataccactgaatccaatta	206357	596792	see also 4987 line	
4990	SUPT16H	NM_007192.2	1081	cagaatggtggcaactataatct	57754	477813	transcription_regulat	-
4991	SUPT16H	NM_007192.2	1083	gagtggtggcaactataatctca	57755	477814	or	-
4992	SUPT16H	NM_007192.2	2783	gcctcttcagccactagtagt	57788	477865	see also 4990 line	
4993	SUPT16H	NM_007192.2	2785	ctccttcagccactagtagtgc	57789	477866	see also 4990 line	
4994	SUPT16H	NM_007192.2	3035	ccctaaactggactaaaatcatg	57794	477870	see also 4990 line	
4995	ANXA10	NM_007193.2	451	gagaattgcctcattgaaataact	137878	544044	calcium-dependent	phospholipid
4996	CHEK2	NM_007194.2	1375	ctgtagatgacagtcagtttat	76898	498207	kinase_related,	
4997	CHEK2	NM_007194.2	1381	atgatcatgcaattatcctaag	76899	498208	cell_cycle,	
4998	CHEK2	NM_007194.2	1419	tacatcatgcaaaaactcttgg	76901	498212	signal_transduction	-
4999	POL1	NM_007195.1	611	atgcgggaagcccatgtataatca	208824	669919	see also 4996 line	
5000	POL1	NM_007195.1	613	gcgggaagcccatgtataatcagt	208825	669920	see also 4999 line	-
5001	IRAK3	NM_007199.1	224	atgttgtcatattgaaaagtat	85898	504491	receptor_activity,	
							kinase_related,	
							signal_transduction	-

Li-Fraumeni Syndrome(リー・フラウメニ症候群)、breast cancer(乳癌)、prostate cancer(前立腺癌)、non-small-cell lung cancer(非小細胞肺癌)、osteosarcoma(骨髄性骨肉腫)

5002	AKAP10	NM_007202.2	1215	ctgcgaagtcaccatttctgttaa	128544	531760	kinase_related、 signal transduction	signal transducer	-
5003	AKAP10	NM_007202.2	1216	tgcgaagtcaccatttctgttaa	128545	531761	see also 5002 line		
5004	AKAP10	NM_007202.2	1498	atgatgtgtacatttagaatt	128551	531770	see also 5002 line		
5005	AKAP10	NM_007202.2	2000	atgggtgcaaggaatactatgtg	128561	531786	see also 5002 line		
5006	DDX20	NM_007204.3	579	ggcgctgcgggctcgatttaatt	24807	458064	-	DNA binding	-
5007	DDX20	NM_007204.3	580	ggcgctgcgggctcgatttaatt	24808	458065	see also 5006 line		
5008	DDX20	NM_007204.3	581	ggcgctgcgggctcgatttaattg	24809	458066	see also 5006 line		
5009	DDX20	NM_007204.3	582	cgctgcgggctcgatttaattgt	24810	458067	see also 5006 line		
5010	DDX20	NM_007204.3	958	tccaggagcaataataattggatt	24825	458081	see also 5006 line		
5011	DDX20	NM_007204.3	1490	agctggccggtttgtgtacattgg	24842	458104	see also 5006 line		
5012	DDX20	NM_007204.3	1513	ggctgacagtgacctactgttc	24843	458105	see also 5006 line		
5013	DUSP10	NM_007207.3	343	aggctgcgaatctgcgctatgt	195510	588442	phosphatase、 kinase_related	-	-
5014	GALNT6	NM_007210.2	534	caccagctgacattgtgtcc	211132	599840	-	-	-
5015	GALNT6	NM_007210.2	892	atcgtaccatcgaccttaattac	211134	599843	see also 5014 line		
5016	GALNT6	NM_007210.2	1099	gagcacatcggtacctatgataa	211140	599847	see also 5014 line		
5017	GALNT6	NM_007210.2	1100	agcacatcggtacctatgataa	211141	599848	see also 5014 line		
5018	GALNT6	NM_007210.2	1431	ttcctgtacctcgacacattgt	211147	599853	see also 5014 line		
5019	RNF2	NM_007212.2	382	gtgcccattttgttgatattgt	337083	451147	-	-	-
5020	RNF2	NM_007212.2	990	acgcactgttgatcaactatcc	337107	451171	see also 5019 line		
5021	SEC63	NM_007214.2	263	ttcgattaaagaataatcagaaaa	270475	652384	-	protein transporter	-
5022	SEC63	NM_007214.2	303	gtgtatcggtttacgggtatttaa	270478	652385	see also 5021 line		
5023	SEC63	NM_007214.2	304	tggatcggtttacgggtatttaa	270479	652386	see also 5021 line		
5024	POLG2	NM_007215.1	1206	acctgttttagccctatttaag	19697	464274	-	zeta DNA polymerase	-
5025	POLG2	NM_007215.1	1207	ccctgttttagccctatttaag	19698	464275	see also 5024 line		
5026	RNF139	NM_007218.3	535	atccagttattgtctgatttgt	250916	786616	receptor_activity、 signal transduction	-	-
5027	RNF139	NM_007218.3	1382	gagagacttattcgcttaagttag	250951	786651	see also 5026 line		
5028	RNF139	NM_007218.3	1386	gacttattcgcttaagttagaac	250952	786652	see also 5026 line		
5029	RNF139	NM_007218.3	2067	ggctgtacattcaagatacttgt	250980	786682	see also 5026 line		
5030	RNF139	NM_007218.3	2069	ctgtacattcaagatacttgtcc	250981	786683	see also 5026 line		
5031	RNF139	NM_007218.3	2089	tccaatgtccatcagaaagtat	250982	786684	see also 5026 line		
5032	RNF24	NM_007219.2	280	ttcaggatgccttaatttgatt	337234	801749	-	-	-
5033	CA5B	NM_007220.2	827	gtctgtcaactggatcatttaaga	156253	557309	-	zinc binding	-
5034	ZHX1	NM_007222.2	775	tgcactttctgagcataatctga	14414	450237	-	-	-
5035	ZHX1	NM_007222.2	781	ttctgagcataatctgaataatc	14415	450238	see also 5034 line		
5036	ZHX1	NM_007222.2	1292	acctacaatctgcatttgataa	14436	450253	see also 5034 line		
5037	ZHX1	NM_007222.2	1518	tacctcagaccataactgttatt	14439	450264	see also 5034 line		
5038	ZHX1	NM_007222.2	1523	cagaccataactgtttattctac	14440	450266	see also 5034 line		
5039	ZHX1	NM_007222.2	2006	cagtgttatactctcaacaatga	14454	450284	see also 5034 line		
5040	ZHX1	NM_007222.2	2776	tgcataacttaaggattattacc	14466	450307	see also 5034 line		

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5041	GPR45	NM_007227.3	1108	tccgcgagggcctgcataagttg	239881	745548	gpcr, signal transduction	-
5042	GPR45	NM_007227.3	1109	ccgcgagccctgcataagttgc	239882	745549	see also 5041 line	-
5043	SLC6A14	NM_007231.1	192	accgtgttaactggttccaaaaa	255972	639971	-	obesity(肥満)
5044	SLC6A14	NM_007231.1	374	ctggacaatttgcctagcttagg	255981	639976	see also 5043 line	-
5045	KLHL2	NM_007246.2	1488	ctgtggaagcctacaacataaag	117783	536853	-	transporter
5046	KLHL2	NM_007246.2	1622	cagtgcttagcacacagtagaatg	117787	536856	see also 5045 line	-
5047	KLHL2	NM_007246.2	1704	gagcaggtgttggtgtgtaaac	117788	536861	see also 5045 line	-
5048	APIGBP1	NM_007247.3	1050	gacagatatgggcttagctaata	304913	810235	-	-
5049	APIGBP1	NM_007247.3	1052	cagatatgggcttagctaatacg	304914	810236	see also 5048 line	-
5050	KLF12	NM_007249.3	321	gtctccaaaacgtccacaactatc	5914	460956	transcription_regulat	-
5051	KLF12	NM_007249.3	434	ctggagccagtggtgactgtcaata	5920	460961	or	-
5052	KLF12	NM_007249.3	801	gtcacctggaaatgtgaacaaca	5930	460965	see also 5050 line	-
5053	KLF12	NM_007249.3	932	tgccaaatgtgaccttagatagc	5933	460967	see also 5050 line	-
5054	KLF12	NM_007249.3	940	gtgaccttagatagcgttaataga	5934	460968	see also 5050 line	-
5055	RPF-1	NM_007252.1	1073	gggggtccacaggtcaactagtta	10818	442942	transcription_regulat	-
5056	RPF-1	NM_007252.1	1074	gggggtccacaggtcaactagtta	10819	442943	or	-
5057	RPF-1	NM_007252.1	1075	gggtccacaggtcaactagtta	10820	442944	see also 5055 line	-
5058	RPF-1	NM_007252.1	1079	cacaggtcaactagttaactag	10821	442945	see also 5055 line	-
5059	RPF-1	NM_007252.1	1537	tccgagaatttgcacaaagctttt	10823	442947	see also 5055 line	-
5060	RPF-1	NM_007252.1	1668	ctggacatcacccctcaaaagtgc	10827	442949	see also 5055 line	-
5061	RPF-1	NM_007252.1	1931	tagagtttggtctgcgaataaga	10836	442962	see also 5055 line	-
5062	VPS45A	NM_007259.2	894	ctgagattggtagcgaataaag	271509	653152	-	-
5063	HSGT1	NM_007265.1	411	aggagggttctcgtcctatagt	111853	729544	transcription_regulat	transcription co-
5064	HSGT1	NM_007265.1	471	atgatttatgtttatgtaataa	111856	729550	or	activator
5065	HSGT1	NM_007265.1	1143	ctcacaatgtagccacattttt	111876	729570	see also 5063 line	-
5066	HSGT1	NM_007265.1	1149	atgtagccacattttctgact	111877	729572	see also 5063 line	-
5067	STXBP3	NM_007269.1	254	accgtgaacctgtcagacaaatg	271038	529996	-	protein transporter
5068	STXBP3	NM_007269.1	257	gtgaacctgtcagacaaatgaaa	271039	529998	see also 5067 line	-
5069	STXBP3	NM_007269.1	816	ggcaatggcatatgctactac	271054	530002	see also 5067 line	-
5070	STXBP3	NM_007269.1	827	atgactactaccatgagaat	271056	530003	see also 5067 line	-
5071	STK38	NM_007271.2	307	acctgtcatcatgagtaacc	101801	515702	kinase related	-
5072	STK38	NM_007271.2	383	aacctatgctcaacatgaaga	101806	515707	see also 5071 line	-
5073	STK38	NM_007271.2	691	tgcggagcgtgacattctagtg	101812	515715	see also 5071 line	-
5074	STK38	NM_007271.2	845	gaggagactcagtttatatagc	101817	515718	see also 5071 line	-
5075	STK38	NM_007271.2	950	agcaaggccatgtgaactttc	101818	515721	see also 5071 line	-
5076	RNF13	NM_007282.3	911	tgcgaagattggttatagcttc	191615	585151	-	-

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5077	BRCA1	NM_007294.1	1247	atgttcttgataacactaaat	13947	456579	transcription_regulat or, apoptosis, cell_cycle, signal_transduction	-	breast cancer(乳癌), Li-Fraumeni syndrome(リー・フラウメニ症候群), ovarian cancer(原発性卵巣癌), non-small-cell lung cancer(非小細胞肺癌)
5078	GRIN1	NM_007327.1	3771	ggcgtagtgctctctcaagacacg	165848	563295	channel,	-	schizophrenia(精神分裂病)
5079	GRIN1	NM_007327.1	3843	tgcgcgacgcgctattggagagg	165850	563296	see also 5078 line	-	
5080	TRPA1	NM_007332.1	3102	agctatgcagggtggaactcata	154202	544010	channel	-	
5081	TTF1	NM_007344.2	2196	aactctcaagggcatatcttgg	337449	451388	transcription_regulat	-	
5082	PAXIP1L	NM_007349.2	3361	cgctggactatgaatcataaag	325589	690542	-	-	
5083	M96	NM_007358.1	637	ttgttcacacacctcatatga	31512	461976	transcription_regulat	DNA binding	
5084	M96	NM_007358.1	999	cagttctggaccaggaatacctca	31520	461992	see also 5083 line	-	
5085	M96	NM_007358.1	1049	tagcacacctatgccttttaaac	31524	461996	see also 5083 line	-	
5086	M96	NM_007358.1	1060	tgccttaacaacctaaagtgtat	31527	461998	see also 5083 line	-	
5087	M96	NM_007358.1	1106	ctgaacttgagcttatgacatcac	31530	461999	see also 5083 line	-	
5088	M96	NM_007358.1	1114	gagcttatgacatacatatga	31531	462002	see also 5083 line	-	
5089	M96	NM_007358.1	1270	ttgttgggttcggaattcgtgt	31532	462008	see also 5083 line	-	
5090	MLN51	NM_007359.3	1853	cagttatcgtggaggacattact	282164	752231	molecular_function unknown	-	
5091	MLN51	NM_007359.3	1887	cagttcaggagcaaatctctatcac	282166	752232	see also 5090 line	-	
5092	NID2	NM_007361.2	3944	atccaatccgaggcaactgttac	127162	538028	-	collagen binding	
5093	NID2	NM_007361.2	3945	tccaatccgaggcaactgttac	127163	538029	see also 5092 line	-	
5094	RAS43	NM_007368.2	1478	gaccgtcatgtgtgacatctctt	298219	665855	-	GTPase activator	
5095	DDX42	NM_007372.1	857	aagatctcttacccttggtttg	59206	483178	-	-	
5096	DDX42	NM_007372.1	2008	gagcccaaggagtgcaacaacaca	59236	483205	see also 5095 line	-	
5097	SHOC2	NM_007373.1	794	atgcttgatttacggcataataa	284214	708879	signal_transduction	molecular_function unknown	
5098	SHOC2	NM_007373.1	795	tgcttgatttacggcataataaa	284215	708880	see also 5097 line	-	
5099	SHOC2	NM_007373.1	1004	ctgtagttagtgcatacaact	284223	708885	see also 5097 line	-	
5100	SHOC2	NM_007373.1	1477	ttggaccagttagttagaattga	284240	708909	see also 5097 line	-	
5101	SHOC2	NM_007373.1	1695	tacagaaattagttcttgacaaac	284246	708914	see also 5097 line	-	
5102	SHOC2	NM_007373.1	1994	aagatgcagggtccatattgtgc	284251	708917	see also 5097 line	-	
5103	MIP	NM_012064.1	556	gggcacacctttgggatgtatta	273968	508398	-	Smad3/Sp-1 heterodimer	
5104	ATF5	NM_012068.2	937	ccgaggggaccgcgaagcaaaaga	21859	455344	transcription_regulat or, cell_cycle	translation regulator	
5105	ATP1B4	NM_012069.2	538	ttcaacttcaacgtttctgaac	191991	585550	-	sodium/potassium- exchanging	
5106	ATRN	NM_012070.2	345	aagacagcccaaatagaataatg	173949	567972	receptor_activity	-	
5107	ATRN	NM_012070.2	2773	gtgtatggaatgtgtatcatgatga	174021	568038	see also 5106 line	-	
5108	ATRN	NM_012070.2	3119	cacttcgagacctgcatactctgg	174030	568041	see also 5106 line	-	

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5109	C10orf8	NM_012071.1	294	agcgaatagaactgttttgcacg	337477	767006	signal transduction	-	-
5110	C10orf8	NM_012071.1	536	caggacttggtgggaacttaa	337490	767013	see also 5109 line	-	-
5111	ORB1	NM_012076.1	2184	caggagacgtgcatacaacttgt	140907	546553	-	calcium ion binding	amaurosis congenita of Leber(レーバー先天性黒内障)、retinitis pigmentosa(色素性網膜炎)
5112	ZFPM2	NM_012082.2	749	cagctattgtcaataaagatata	113403	526173	-	-	-
5113	ZFPM2	NM_012082.2	1676	ttgagtgtaacatacaactcaat	113424	526188	see also 5112 line	-	-
5114	ZFPM2	NM_012082.2	2661	tactgcacatcagcgtaatgacc	113449	526224	see also 5112 line	-	-
5115	APPL	NM_012096.1	106	cccgagacacaaggctttactag	129011	755587	kinase-related,	-	-
5116	APPL	NM_012096.1	184	agctatgcacatggatttatgatg	129019	755590	signal transduction	-	-
5117	APPL	NM_012096.1	285	gagtgatgatgaagtatragc	129022	755593	see also 5115 line	-	-
5118	APPL	NM_012096.1	672	aagctcagataaagttctttaag	129035	755609	see also 5115 line	-	-
5119	APPL	NM_012096.1	1143	atcatgaagagtggaatctgtaca	129053	755626	see also 5115 line	-	-
5120	APPL	NM_012096.1	1482	gaggcagcgtacaaatccattt	129063	755637	see also 5115 line	-	-
5121	APPL	NM_012096.1	1483	aggcagcgtacaaatccatttg	129064	755638	see also 5115 line	-	-
5122	APPL	NM_012096.1	1484	ggcagcgtacaaatccatttgg	129065	755639	see also 5115 line	-	-
5123	APPL	NM_012096.1	1543	ttctattctcatcagttattta	129067	755640	see also 5115 line	-	-
5124	APPL	NM_012096.1	1853	ctgtcatcagtcgtctatatatt	129076	755653	see also 5115 line	-	-
5125	APPL	NM_012096.1	1858	atcagctcgtctatatattgagt	129077	755655	see also 5115 line	-	-
5126	APPL	NM_012096.1	1949	cttgatcgttagggatcagaataa	129079	755659	see also 5115 line	-	-
5127	ARL5	NM_012097.2	543	tactatctaacacagagttgt	108530	807605	signal transduction	-	-
5128	ARL5	NM_012097.2	548	tactaacacagagttgttaag	108531	807606	see also 5127 line	-	-
5129	ANGPTL2	NM_012098.2	1911	ttccgaggagcgtcttactcaact	171174	685801	-	receptor binding	Alzheimer disease(アルツハイマー病)
5130	ANGPTL2	NM_012098.2	1919	aggcttctactcaactcaagaag	171175	685802	see also 5129 line	-	-
5131	DNPEP	NM_012100.1	657	tcactcgcagcgaaatcaac	186614	580444	-	vacuolar aminopeptidase I	-
5132	AUP1	NM_012103.2	154	ggcggagcggctcttctgactcg	216116	603480	-	-	-
5133	AUP1	NM_012103.2	977	cccttcaecgggtgtatcaagtaa	216128	603491	see also 5132 line	-	-
5134	BACE	NM_012104.2	906	gtcactgtcgtgcgaacattgc	184961	579250	-	-	Alzheimer disease(アルツハイマー病)
5135	BACE	NM_012104.2	1568	caggtcccaagacgactgttaca	184971	579257	see also 5134 line	-	-
5136	BACE	NM_012104.2	1571	gtcccaagacgactgttacaagt	184972	579258	see also 5134 line	-	-
5137	CHIC2	NM_012110.2	424	tcaggtaacgtcacccgtatttg	278676	736562	-	-	-
5138	CHIC2	NM_012110.2	651	aacacgaagatcattgagaagt	278681	736569	see also 5137 line	-	-
5139	CHIC2	NM_012110.2	767	atgtcatctctatagaatttta	278685	736574	see also 5137 line	-	-
5140	AHSA1	NM_012111.1	1081	aggcctggcagcggactactctt	337515	759648	-	-	-
5141	AHSA1	NM_012111.1	1082	ggcgtgcagcggactactcttg	337516	759649	see also 5140 line	-	-
5142	AHSA1	NM_012111.1	1083	ggcgtgcagcggactactcttga	337517	759650	see also 5140 line	-	-
5143	CD2AP	NM_012120.1	380	gcgtcagtgtaaaagttcttttg	286937	533336	signal transduction	-	-
5144	CD2AP	NM_012120.1	721	ctgtgaaacttcggcagaagaaca	286942	533342	see also 5143 line	-	-
5145	CD2AP	NM_012120.1	1808	tagagccagattattgaattgt	286975	533363	see also 5143 line	-	-
5146	CHORDC1	NM_012124.1	381	ccctaagccagcgtagaagaataa	278691	719563	-	-	-
5147	DDAH1	NM_012137.2	547	ctgaatcttggctgatactttt	203785	595522	signal transduction	dimethylargininase	-
5148	DDX26	NM_012141.1	1106	gtgtctccagaagtgttaactc	58980	482925	receptor activity	-	non-small-cell lung cancer(非小細胞肺癌)
5149	DDX26	NM_012141.1	1109	ttctccaagaatgcttaactcagt	58981	482926	see also 5148 line	-	-

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5150	DDX26	NM_012141.1	1140	tccttggtgcagaaagtacaaag	58984	482927	see also 5148 line	
5151	EHF	NM_012153.2	173	aggtgggtgaatgaatcacaac	2979	443200	-	-
5152	EPB41L1	NM_012156.2	2523	tcagatcatcgggaagaatgtcc	117029	522610	-	-
5153	EPB41L1	NM_012156.2	2593	accaccatgtccacaaactgt	117030	522611	see also 5152 line	
5154	FBXL3A	NM_012158.1	584	ccagagctgacaaacagattatt	228309	706157	-	-
5155	FBXL3A	NM_012158.1	1361	cagaaagtgcaaaaattgtca	228346	706185	see also 5154 line	
5156	FBXL3A	NM_012158.1	1410	ctcatgtatgccttctgttggat	228348	706186	see also 5154 line	
5157	FBXL3A	NM_012158.1	1490	ttcttgacaaagaattatgttg	228352	706192	see also 5154 line	
5158	FBXL4	NM_012160.3	384	cagttctgaccatgtttttatt	324156	782018	-	-
5159	FBXL4	NM_012160.3	924	gccagtttaaaccttcttattag	324184	782029	see also 5158 line	
5160	FBXL4	NM_012160.3	1507	ttgcagccacttcttaataaaa	324201	782044	see also 5158 line	
5161	FBXL4	NM_012160.3	2048	ctgagacatataggaaacaagaat	324220	782054	see also 5158 line	
5162	FBXL5	NM_012161.2	176	tactgcgacaagcttctaaac	228382	803640	-	-
5163	FBXL5	NM_012161.2	441	aagagagattggaggcttttaca	228386	803653	see also 5162 line	
5164	FBXL5	NM_012161.2	1250	cagagcttcggcactcttgatct	228408	803673	see also 5162 line	
5165	FBXW2	NM_012164.2	333	atggctcgatcctcagactttac	228828	688783	-	ubiquitin-protein ligase
5166	FBXW2	NM_012164.2	334	tggtcgtgatcctcagactttact	228829	688784	see also 5165 line	
5167	FBXW2	NM_012164.2	379	cagtggaaataaagtgataagtc	228832	688789	see also 5165 line	
5168	FBXW2	NM_012164.2	412	gtgtgcagactgcagctgtaaaa	228833	688790	see also 5165 line	
5169	FBXW2	NM_012164.2	414	gtggcagactgcagctgtaaaaatt	228834	688791	see also 5165 line	
5170	FBXW2	NM_012164.2	441	ctggcagactgagatgctgttc	228835	688793	see also 5165 line	
5171	FBXW2	NM_012164.2	567	tgccagagtgatgcactttact	228838	688798	see also 5165 line	
5172	FBXW2	NM_012164.2	570	cagagtgatgcactttacttaca	228839	688799	see also 5165 line	
5173	FBXW2	NM_012164.2	572	gagtgatgcactttacttaca	228840	688800	see also 5165 line	
5174	FBXW2	NM_012164.2	986	ctggagactacatcctcttaagt	228846	688807	see also 5165 line	
5175	FBXO22	NM_012170.2	588	tagcaatcagctcaggaataag	337725	732191	-	-
5176	FBXO22	NM_012170.2	589	agcaatcagctcaggaataaga	337726	732192	see also 5175 line	
5177	FBXO22	NM_012170.2	593	atcgactcaggaataagaatt	337727	732193	see also 5175 line	
5178	FBXO3	NM_012175.2	358	caggtgtcctcgatggtttttat	228598	710730	-	-
5179	FBXO3	NM_012175.2	359	aggtgtcctcgatggtttttatc	228599	710731	see also 5178 line	
5180	FBXO7	NM_012179.2	467	ttggttcaatagggatgttttc	228708	768713	-	ubiquitin-protein ligase
5181	FBXO7	NM_012179.2	468	tggttcatatggagattgtttct	228709	768714	see also 5180 line	
5182	FBXO8	NM_012180.1	908	gagagaatttttctgcatatcc	294965	670799	-	guanyl-nucleotide release factor
5183	FBXO8	NM_012180.1	1053	ctgtgtactctttgattctact	294969	670807	see also 5182 line	
5184	CABYR	NM_012189.2	2117	cccagtagaagaatgtagctaaaa	298642	666171	kinase_related, signal transduction	-
5185	FZD4	NM_012193.2	1140	aagatatctgtgattttgaag	242548	630620	receptor_activity, gpcr,	
5186	GAPCEN	NM_012197.2	3257	accgaacactgagctocataaag	120545	760448	signal transduction cell cycle	frizzled receptor



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5227	XRN2	NM_012255.2	595	tgcataatgccttcgctattaca	55794	703551	see also 5224 line		
5228	XRN2	NM_012255.2	614	tacatagctgatcgtttaataaa	55795	703552	see also 5224 line		
5229	XRN2	NM_012255.2	619	agctgatcgtttaaatgaacc	55796	703553	see also 5224 line		
5230	XRN2	NM_012255.2	1167	accgttggttaacatatataaa	55813	703571	see also 5224 line		
5231	XRN2	NM_012255.2	1246	aaggtacagatgatcattgtag	55816	703573	see also 5224 line		
5232	XRN2	NM_012255.2	1404	ctcatgccttggttcaagaat	55820	703574	see also 5224 line		
5233	HBP1	NM_012257.2	612	tagcaaaagttaacattcctatg	27938	459928	transcription_regulat	-	
5234	HBP1	NM_012257.2	960	tctcatgctctaaagtgttat	27944	459935	see also 5233 line		
5235	HBP1	NM_012257.2	1007	gcgagctgtactgaagtgaact	27946	459937	see also 5233 line		
5236	HBP1	NM_012257.2	1081	gaccacccotttctatgttaaaa	27949	459939	see also 5233 line		
5237	HBP1	NM_012257.2	1464	gagtgccactctctctaataagt	27963	459951	see also 5233 line		
5238	HBP1	NM_012257.2	1466	gtgccacttctctaataatgic	27964	459952	see also 5233 line		
5239	HEY1	NM_012258.2	181	tgcggacgagaatggaaacttga	4736	459973	transcription_regulat	transcription factor	-
5240	HEY2	NM_012259.1	105	gacgtgggagcggagacaatta	4753	459983	transcription_regulat	-	
5241	HPCL2	NM_012260.1	277	gagcaagcggctgttatgtctgc	166019	562669	-	-	
5242	HS2ST1	NM_012262.2	418	cgcgggtggcgtgctcttcttgc	218769	605372	-	magnesium binding	-
5243	HS2ST1	NM_012262.2	639	atgacctgtgtcgaagaataaa	218773	605380	see also 5242 line	-	
5244	DNAJB5	NM_012266.2	535	gtggtcccaaccccttcatactc	299055	668489	-	heat shock protein	-
5245	DNAJB5	NM_012266.2	539	ctcaaccccttcgatattctct	299056	668490	see also 5244 line	-	
5246	PLD3	NM_012268.1	1563	cccggtcaaccacacaagaatc	197518	622520	-	-	
5247	HYPC	NM_012272.1	2251	aggactcgccacgtcataagc	337937	707413	-	-	
5248	HYPC	NM_012272.1	2256	tgcgccactcataaagcttga	337938	707414	see also 5247 line	-	
5249	HYPC	NM_012272.1	2260	cccacgtcataaagcttgacaag	337939	707415	see also 5247 line	-	
5250	HYPC	NM_012272.1	2293	cactggacggcagcacatcaag	337940	707416	see also 5247 line	-	
5251	HYPC	NM_012272.1	2586	cacaccaaggcgaagacatgg	337942	707419	see also 5247 line	-	
5252	HYPC	NM_012272.1	2751	tcctcacttgatgaagtgaag	337943	707421	see also 5247 line	-	
5253	ITGB1BP2	NM_012278.1	153	tgtgcggaagcgaactgtaga	131991	704870	signal transduction	protein binding	-
5254	JAZ	NM_012279.2	347	aagagataccctagcaatcatgg	48456	472408	apoptosis	-	
5255	KOND2	NM_012281.2	2707	aagagtggttaactaaactgt	132526	536452	channel	-	
5256	TRAM2	NM_012288.1	1158	cccacggactaagaactcaagt	302604	747263	-	-	
5257	TLK1	NM_012290.3	471	tagcgactatttgaataccagg	102664	516487	kinase_related,	-	
5258	TLK1	NM_012290.3	1619	tgtatacagatacagtttgaca	102698	516535	cell cycle	-	
5259	TLK1	NM_012290.3	1916	cccaggggagcaggcactactgg	102712	516547	see also 5257 line	-	
5260	TLK1	NM_012290.3	1922	ggcagggcactacttggtattta	102713	516548	see also 5257 line	-	
5261	TLK1	NM_012290.3	2310	tcttcaagcataataactaact	102723	516556	see also 5257 line	-	
5262	GFR	NM_012294.1	145	tacttcgatgtgcttatttca	128296	664752	signal transduction	-	
5263	GFR	NM_012294.1	149	tto-gatgtgccttatttcaata	128297	664753	see also 5262 line	-	
5264	G3BP2	NM_012297.2	908	ctggaattccaccacctgttaaa	51883	473035	receptor signaling complex scaffold protein	-	

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5265	G3BP2	NM_012397.2	1193	tggacattgcacatcaataccaag	51893	473039	see also 5264 line	
5266	G3BP2	NM_012397.2	1422	cagtgatccacgtggaattgg	51897	473047	see also 5264 line	
5267	FBXW1B	NM_012300.1	808	gcgggtgggacgcacacaactgc	22800	750217	-	-
5268	FBXW1B	NM_012300.1	839	cagtgccgcctctgaaatagtaa	22801	750218	see also 5267 line	
5269	EPB41L3	NM_012307.2	1114	aacggaacaaacttttacatgaag	117128	522884	-	structural molecule
5270	EPB41L3	NM_012307.2	1337	aagagccagtcgctgttagatgc	117142	522887	see also 5269 line	non-small-cell lung cancer(非小細胞肺癌)
5271	EPB41L3	NM_012307.2	1435	ctggccagtcgacccacacaaaa	117146	522893	see also 5269 line	
5272	KPNA6	NM_012316.3	110	atcgaatgaagagactataagaac	269399	651454	-	-
5273	KPNA6	NM_012316.3	1353	atggaactgcgtgactgaatgg	269424	651483	see also 5272 line	
5274	LETM1	NM_012318.1	1205	aggaaatcatcgctttttccaaa	147306	549276	signal transduction	-
5275	MAPK8IP2	NM_012324.2	191	aggacataagcctgggaagaattt	120656	525247	kinase related,	-
5276	MAPK8IP2	NM_012324.2	193	gacataagcctgggaagaattga	120657	525248	apoptosis	-
5277	MAPK8IP2	NM_012324.2	1175	acctggtagccgcacgatgtctcc	120660	525257	see also 5275 line	
5278	MAPRE3	NM_012326.2	196	ctgagtcgccatgatattctgc	120310	525103	-	microtubule binding
5279	PIGN	NM_012327.3	828	ctggatcacgtgggtttttgataa	338039	596150	-	-
5280	MMD	NM_012329.1	180	cacacacgcattctcctattgttc	250020	677605	receptor activity	-
5281	MMD	NM_012329.1	456	atctcatatcgctgtgtttatct	250026	677614	see also 5280 line	receptor
5282	MMD	NM_012329.1	489	agctggggaagcaacattatgat	250027	677616	see also 5280 line	
5283	MYST4	NM_012330.1	953	ttccaatatgtagcttctgttg	33257	462177	transcription_regulat	-
5284	MYST4	NM_012330.1	1335	accattggagccgcgaaaaata	33264	462187	or	-
5285	MYST4	NM_012330.1	1336	ccattggagccgcgaaaaata	33265	462188	see also 5283 line	
5286	MYST4	NM_012330.1	1343	gacgaccgaaaaataaataaag	33266	462191	see also 5283 line	
5287	MYST4	NM_012330.1	1375	ttgtctgaaccagtgatgaagg	33267	462194	see also 5283 line	
5288	MYST4	NM_012330.1	2533	caggaaatagcaagattaccaaa	33299	462204	see also 5283 line	
5289	MYST4	NM_012330.1	2540	atgcaagattaccacaaagcttac	33301	462205	see also 5283 line	
5290	MYST4	NM_012330.1	2541	tgcgaagattaccacaaagcttac	33302	462206	see also 5283 line	
5291	MYST4	NM_012330.1	5771	aactgcagcagttactaatata	33349	462247	see also 5283 line	
5292	MYST4	NM_012330.1	5784	aactaatacacttatgatcatt	33352	462249	see also 5283 line	
5293	MYST4	NM_012330.1	5843	atgcaaacagtcgcttctgttc	33353	462251	see also 5283 line	
5294	MYCBP	NM_012333.2	129	ttgtagccttatataagaaccc	111921	669153	transcription_regulat	transcription co-
5295	MYO10	NM_012334.1	2261	aggacttttacaagaagtataa	92564	509230	or	activator
5296	MYO10	NM_012334.1	5273	ttgtccttcccgagatgaata	92609	509281	signal transduction	motor
5297	NARF	NM_012336.2	488	gtcttgggtgacactgtattt	127828	732273	see also 5295 line	
5298	TM4SF12	NM_012338.2	801	tgggctctgtattatgatagaag	327690	782252	-	-
5299	GTPBP4	NM_012341.1	339	gtggaacattgttctaaagatta	109304	519583	-	GTP binding
5300	GTPBP4	NM_012341.1	340	tggacaattgtgctaaagattat	109305	519584	see also 5299 line	
5301	GTPBP4	NM_012341.1	640	ttgttgggacacatggattataag	109311	519599	see also 5299 line	
5302	NNT	NM_012343.2	2930	tggaaatttctgcacacataag	223124	610430	-	electron
5303	NNT	NM_012343.2	3123	ccgaattcgcgtgacgttaag	223137	610433	see also 5302 line	
5304	OSTF1	NM_012383.3	172	cagtcacacccagggcaagttaa	134462	540375	signal transduction	protein binding
5305	OSTF1	NM_012383.3	178	aaccagggcaagttaaagcttc	134463	540376	see also 5304 line	

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5345	TRPC5	NM_012471.1	2329	atgtggcaccgactctgtatgo	261791	645539	channel	store-operated calcium channel	-
5346	TRPC5	NM_012471.1	2351	cggaaagcactctcgaatattac	261792	645540	see also 5345 line		
5347	TRPC5	NM_012471.1	3806	atggacagagaagaagaattaca	261829	645592	see also 5345 line		
5348	TSERP	NM_012472.3	84	atcacagaagactctattagagc	338239	708146	-	-	-
5349	USP21	NM_012475.2	1257	ctccacgacctcgagattttt	189181	583204	-	-	-
5350	USP21	NM_012475.2	1258	tccacagactcagagttttt	189182	583205	see also 5349 line		
5351	USP21	NM_012475.2	1263	gaccttgagattttttgacc	189183	583206	see also 5349 line		
5352	USP21	NM_012475.2	1397	gtgaccgactcgcagagaaact	189186	583207	see also 5349 line		
5353	USP21	NM_012475.2	1418	ctcgaagtacaaaagttgaca	189189	583209	see also 5349 line		
5354	WBP2	NM_012478.2	507	gccagtcgccaatggaatgacc	338291	542289	-	-	-
5355	E46L	NM_013236.1	779	aggagaacctcaatttgaatt	279575	667669	-	-	-
5356	E46L	NM_013236.1	1322	ttcgtctgattggaatctgtgt	279590	667690	see also 5355 line		
5357	GTL3	NM_013242.1	636	acggctggaaccagattcagttc	320689	696877	-	-	-
5358	GTL3	NM_013242.1	712	cagagtgagatcatgcaaat	320694	696879	see also 5357 line		
5359	SCG3	NM_013243.2	1178	atggcttggaaggagaactaaa	338395	698633	receptor activity, signal transduction	-	-
5360	HGNT-IV-	NM_013244.2	1355	tggctacattgtgaaactctatc	212131	600569	-	-	-
5361	HGNT-IV-	NM_013244.2	1438	gtgattggctattgactcatttc	212136	600576	see also 5360 line		
5362	H	NM_013244.2	1656	agcaaggctacagtattgtga	212141	600585	see also 5360 line		
5363	VPS4A	NM_013245.2	333	aagctgaaggattattttacgaag	107393	517538	-	-	-
5364	VPS4A	NM_013245.2	334	agctgaaggattattttacgaagc	107394	517539	see also 5363 line		
5365	OLC	NM_013246.1	61	ggggactcgtggggagtgtagc	168489	565446	signal transduction	-	-
5366	PRSS25	NM_013247.3	1355	cgggcaaggaggagttgtgttg	182570	575947	apoptosis	-	-
5367	PRSS25	NM_013247.3	1396	cactgcagaacacgacacatcc	182572	575948	see also 5366 line		
5368	MKLN1	NM_013255.2	112	tacctccgagagacacatttagt	338409	705070	-	-	-
5369	MKLN1	NM_013255.2	401	tcctgtgtgattcattaaaata	338418	705085	see also 5368 line		
5370	MKLN1	NM_013255.2	725	atgatggctgttcaatcagttat	338430	705099	see also 5368 line		
5371	MKLN1	NM_013255.2	729	tggctgttcaatcagttatata	338431	705101	see also 5368 line		
5372	MKLN1	NM_013255.2	733	ttgttcaatcagttatcagttca	338432	705102	see also 5368 line		
5373	MKLN1	NM_013255.2	1211	cagaaaaacatatgattcactac	338457	705121	see also 5368 line		
5374	MKLN1	NM_013255.2	1922	ggcattgcaagttacacctcaca	338475	705142	see also 5368 line		
5375	MKLN1	NM_013255.2	2158	gacaccttagtaaatcttttcc	338481	705147	see also 5368 line		
5376	SGKL	NM_013257.3	907	aacacgtgaaagctttattttg	100346	514655	kinase related	-	-
5377	SGKL	NM_013257.3	1300	ttgccgagattgtctgaaatgt	100356	514661	see also 5376 line		
5378	PPARGC1	NM_013261.2	927	ccccaaagggttccactttgaga	36612	698438	transcription, regulat or	lipodystrophy(リポジストロフィー)	
5379	PPARGC1	NM_013261.2	1330	ctcgaagactctagacaactaga	36622	698451	see also 5378 line		
5380	PPARGC1	NM_013261.2	1849	tcgtgtcccatcaccattatc	36633	698463	see also 5378 line		
5381	BRD7	NM_013263.1	523	aaccaccaatggatttagtacc	323755	704113	-	-	-
5382	DDX25	NM_013264.2	1137	agcgagcttcattcattcagagg	50779	473564	-	-	-

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5383	SLC30A1	NM_013272.2	2180	ctgagcaccagtgagttcttgc	274591	657330	-	-	-
5384	FLRT3	NM_013281.2	285	atcttctctaatcgggactaaat	146200	548749	-	receptor signaling	-
5385	FLRT3	NM_013281.2	1135	ttgatgattggacaataaaca	146228	548795	see also 5384 line	protein	-
5386	TIG	NM_013285.1	1017	ttgggttcattggctatccaaat	109383	757283	-	GTPase	-
5387	HUMAUA1	NM_013285.1	1018	tggttcattggctatccaaatg	109384	757284	see also 5386 line	pre-mRNA splicing	-
5388	TRA2A	NM_013293.2	224	gggaactcctgctcgtgtaaat	47370	811655	-	factor	-
5389	LGN	NM_013296.3	921	aacttcaggagtcaggttatagc	297951	665162	-	signal transduction	-
5390	LGN	NM_013296.3	924	ttcaggagtcaggttatagctca	297952	665163	see also 5389 line	gpcr	-
5391	SLC30A4	NM_013309.3	326	gcgcgtggaagcgcctcaatct	266400	653931	-	zinc ion	-
5392	SLC30A4	NM_013309.3	1181	tagctgcatacatcatcagattc	266420	653955	see also 5391 line	see also 5391 line	-
5393	SLC30A4	NM_013309.3	1182	agctgcatacatcatcagattca	266421	653956	see also 5391 line	see also 5391 line	-
5394	SLC30A4	NM_013309.3	1185	tgcatcatcatcatcagattcaagc	266422	653957	see also 5391 line	see also 5391 line	-
5395	BLNK	NM_013314.2	776	aagctccatggtggaatagatca	252563	680731	kinase related	-	-
5396	CNOT4	NM_013316.1	1043	atctacgggttcagtgataaaa	58667	481957	-	-	-
5397	CNOT4	NM_013316.1	1213	cagtcaccccatcagttcatcc	58671	481965	see also 5396 line	-	-
5398	CNOT4	NM_013316.1	1454	ggcttgggtttcttaaaacacc	58677	481972	see also 5396 line	-	-
5399	APG4B	NM_013325.3	1071	aggcgccctgccatgtttgagc	338715	784968	-	-	-
5400	PSCR2	NM_013328.2	683	cgggcctgctctatgattcatgg	225713	612587	-	-	-
5401	C21orf66	NM_013329.2	1828	agcatggcgttcaaaatactaca	23446	452957	transcription_regulat	-	-
5402	GMPPB	NM_013334.2	829	gccaaaggaggagcagctatagc	209209	598682	or	-	-
5403	GMPPA	NM_013335.2	522	tacggctgcacgttgagaatcc	209198	747483	-	-	-
5404	ALC5	NM_013338.3	808	acgatgggcatttgatgagaac	211344	600150	-	-	-
5405	SART2	NM_013352.1	2124	agggcagcttacctctctcatagg	323344	774903	-	-	-
5406	TMOD4	NM_013353.1	557	gtgtacagcctgacaagataaa	119723	524752	-	-	-
5407	TMOD4	NM_013353.1	558	tggtacagcctgacaagataag	119724	524753	see also 5406 line	-	-
5408	PADI1	NM_013358.1	1242	ctgggtctcgaacttggtatgt	149327	550884	-	protein-arginine	-
5409	PCOLCE2	NM_013363.2	1194	acgccacagctcagatcatcaac	95940	739904	-	deiminase	-
5410	ANAPC4	NM_013367.1	537	agggaagctctggattttatgagc	227521	714938	-	-	-
5411	ANAPC4	NM_013367.1	816	gtgtgaagcatgggaagaataac	227531	714953	cell cycle	-	-
5412	ANAPC4	NM_013367.1	1372	gaggtcctcagacctttataatcg	227552	714967	see also 5410 line	-	-
5413	ABT1	NM_013375.2	433	gcgcagccctccctgttatgac	111413	657898	transcription_regulat	-	-
5414	TRHDE	NM_013381.1	1398	caccatggtcattgttcattgaga	160165	555497	or	-	-
5415	POMT2	NM_013382.3	1428	tttgactagacacacaaagaact	211969	769441	signal transduction	gpcr	-
5416	LASS2	NM_013384.3	515	gtggataaacctggttctatga	6024	445154	zinc binding	-	-
							transcription_regulat	-	-

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5417	LASS2	NM_013384.3	552	ggagaggatcccatcacagc	6025	445158	see also 5416 line		
5418	LASS2	NM_013384.3	592	ttgtactacattgaacttt	6028	445160	see also 5416 line		
5419	TMEM2	NM_013390.1	3010	tggctctgtgacaggatacaagg	327931	743819	-	-	
5420	TMEM2	NM_013390.1	3583	atctoaaggatgtgaagagtoa	327957	743838	see also 5419 line		
5421	DMGDH	NM_013391.2	274	tggcagcagcagggtttaacaac	214724	736017	-	oxidoreductase	
5422	DMGDH	NM_013391.2	275	ggcagcagcagggtttaacaact	214725	736018	see also 5421 line		
5423	DMGDH	NM_013391.2	277	cagcagcagggtttaacaactta	214726	736019	see also 5421 line		
5424	DMGDH	NM_013391.2	278	acgcagcagggtttaacaacttac	214727	736020	see also 5421 line		
5425	NRBP	NM_013392.1	354	gtgcatactcggccatggataca	94988	510523	kinase related,		
5426	NRBP	NM_013392.1	498	ttgttaagtttcaacaatatgg	94992	510531	signal_transduction	-	
5427	NRBP	NM_013392.1	774	tggctctgacacatcaacaact	94999	510537	see also 5425 line		
5428	NRBP	NM_013392.1	1239	aaccagttcagacttgactct	95007	510546	see also 5425 line		
5429	USP25	NM_013396.2	948	tagaagattagttctgaattaca	189204	583232	ubiquitin-specific		
5430	USP25	NM_013396.2	2080	tcagaatccatcgaacaattga	189238	583262	protease	small cell lung cancer(肺癌)	
5431	STRN4	NM_013403.1	386	ggccaaatatacataaactgaag	122962	527514	signal_transduction	-	
5432	NCKAP1	NM_013436.2	861	taccocatagaaagtctcttca	311619	692786	apoptosis	-	
5433	NCKAP1	NM_013436.2	1152	ctctcttgggatgaatttc	311629	692794	see also 5432 line		
5434	NCKAP1	NM_013436.2	2089	ggccaaacagctcgaactca	311667	692822	see also 5432 line		
5435	NCKAP1	NM_013436.2	3118	aactgatagaagggttgaatga	311700	692864	see also 5432 line		
5436	NCKAP1	NM_013436.2	3128	aaggttcaaatggtgtatga	311701	692865	see also 5432 line		
5437	NCKAP1	NM_013436.2	3613	tgcataccatgctgtctacaac	311719	692881	see also 5432 line		
5438	NCKAP1	NM_013436.2	3622	tgcgtctacaacaaaagtga	311721	692882	see also 5432 line		
5439	ST7	NM_013437.2	48	ctgtcgtcggagcacaagaagt	284505	779254	-	-	
5440	ST7	NM_013437.2	50	gtcgtcggagcacaagaagtct	284506	779255	see also 5439 line		
5441	ST7	NM_013437.2	975	tgggtattatgcacaatatatg	284541	779295	see also 5439 line		
5442	ST7	NM_013437.2	2548	cagataccagacacttgcttaga	284578	779338	see also 5439 line		
5443	UBQLN1	NM_013438.2	492	ctgaccacacttggtgatatt	338927	767187	-	-	
5444	UBQLN1	NM_013438.2	1526	atgctgaataatccctatttgc	338939	727270	see also 5443 line		
5445	UBQLN1	NM_013438.2	1529	ctgaataatccctatttgc	338940	727271	see also 5443 line		
5446	UBQLN2	NM_013444.2	1894	tggaccacaacagcagcttcttc	338967	707437	-	-	
5447	BAZ1A	NM_013448.2	3231	agccaaatcgggtggttttac	22252	455851	transcription_regulat		
5448	BAZ1A	NM_013448.2	3237	atcgggtggtgttttacagttct	22254	455852	or	-	
5449	BAZ2A	NM_013449.2	358	tggcttatctactgtatctaca	22306	455980	transcription_regulat		
5450	LAMP2	NM_013995.1	1285	ctggttcttcaaggcttgattac	323637	506422	or	-	
5451	LAMP2	NM_013995.1	1292	ttoagcttgattatogttatag	323638	506424	-	-	diabetes(糖尿病)
5452	ZNF297B	NM_014007.1	1228	atgtgacgtctccattgttgc	45063	470786	see also 5450 line		
5453	JM1	NM_014008.1	97	cggaccgaatcctcattcattcg	339007	751896	-	-	
5454	ASTN2	NM_014010.2	1135	aagccctgaaaagattctcagg	339027	708542	-	-	
5455	ASTN2	NM_014010.2	3120	cactacaactctcactatgaaaa	339046	708566	see also 5454 line		

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5456	SACM1L	NM_014016.1	259	atccatctgtgagcagtaatta	339151	742326	-	-	-
5457	SACM1L	NM_014016.1	550	agggcagatcagcgggtttgatg	339163	742346	see also 5456 line		
5458	SACM1L	NM_014016.1	551	ggcagatcagcgggtttgatg	339164	742347	see also 5456 line		
5459	SACM1L	NM_014016.1	832	cagatcagcgggtttgatg	339169	742354	see also 5456 line		
5460	MAPBP1P	NM_014017.1	251	aacgggaaccaagcgttaatga	323569	742398	-	-	-
5461	MAPBP1P	NM_014017.1	253	cgggaaccaagcgttaatgaag	323570	742399	see also 5460 line		
5462	KIAA0982	NM_014023.1	208	agcctttctacgaagaactaa	339286	773769	-	-	-
5463	KIAA0982	NM_014023.1	798	tggagatcagactgctcatatct	339301	773792	see also 5462 line		
5464	ASF1A	NM_014034.1	339	aagtgaagaatacagatcaagttt	17842	717115	-	-	-
5465	ASF1A	NM_014034.1	341	gtgaagaatacagatcaagttt	17843	717116	see also 5464 line		
5466	SNX24	NM_014035.1	489	ctgcagccagcgttttccaat	270722	682001	-	protein transporter	-
5467	SNX24	NM_014035.1	493	agccagcgttttccaatgttg	270723	682003	see also 5466 line		
5468	BZW2	NM_014038.1	490	aactatgctcagcttccaataa	56142	476376	-	-	-
5469	PTD012	NM_014039.2	384	ttagaggtgcttcttctattg	339351	747650	-	-	-
5470	SPC12	NM_014041.1	287	tagttagcccggtttgctttt	191689	584564	-	peptidase	-
5471	GMH1	NM_014044.4	1755	tagttagaataccttatgttg	339409	721591	-	-	-
5472	CDV-1	NM_014055.2	1743	aaggaatcagatagatagctga	339438	685956	-	-	-
5473	CDV-1	NM_014055.2	2299	aggaatagggacacagtatacc	339460	685974	see also 5472 line		
5474	OGN	NM_014057.2	836	accagaagtcagctgaattc	169427	566126	-	-	-
5475	MCTSI	NM_014060.1	348	gagcaatttccaggtattgaacc	52483	474118	cell cycle	-	-
5476	MCTSI	NM_014060.1	736	aaggaattggcattgaaatc	52496	474127	see also 5475 line		
5477	NCOA6	NM_014071.2	688	agggattctctcgttcagattg	18644	450887	transcription_regulat	-	-
5478	NCOA6	NM_014071.2	1071	gacaaatgaacccagctaat	18650	450894	see also 5477 line		
5479	NCOA6	NM_014071.2	1646	tcctcccaacggtaaccacaac	18655	450902	see also 5477 line		
5480	NCOA6	NM_014071.2	1651	cccaacgggttaaccacactcgc	18656	450903	see also 5477 line		
5481	NCOA6	NM_014071.2	1683	gaccaagccacctcaaaataac	18657	450905	see also 5477 line		
5482	NCOA6	NM_014071.2	1747	tcggaatctatagttcaacagg	18661	450908	see also 5477 line		
5483	NCOA6	NM_014071.2	3224	aaccggccaccaggttatcttc	18693	450945	see also 5477 line		
5484	NCOA6	NM_014071.2	4172	gggcaagcacctccaattctac	18712	450968	see also 5477 line		
5485	NCOA6	NM_014071.2	4173	ggcaagcacctccaattctacc	18713	450969	see also 5477 line		
5486	NCOA6	NM_014071.2	5181	tgcagctctgattgatacaaca	18747	450991	see also 5477 line		
5487	NCOA6	NM_014071.2	5421	tacacatacctcagaacataaaa	18752	450999	see also 5477 line		
5488	NUPL1	NM_014089.2	549	cagcagcatccacagcatttact	339540	771332	-	-	-
5489	NUPL1	NM_014089.2	1137	cagctcctgctgactctcaga	339556	771350	see also 5488 line		
5490	NUPL1	NM_014089.2	1586	acgccttcctgctgactctcaga	339574	771364	see also 5488 line		
5491	NUPL1	NM_014089.2	1617	tgcatacagtgagcttaggtttt	339576	771365	see also 5488 line		
5492	NUPL1	NM_014089.2	1624	aagtgcttaggtttcttcaaac	339577	771366	see also 5488 line		
5493	NUPL1	NM_014089.2	1746	cagcctttggcagctcagaagaca	339579	771369	see also 5488 line		
5494	PRO2000	NM_014109.2	3422	gaggttagctctctccaatat	98117	488775	-	-	-
5495	PRO2000	NM_014109.2	3423	aggttagctctctccaatat	98118	488776	see also 5494 line		
5496	TRPS1	NM_014112.1	1343	ccccacagatctgattagcact	13595	449661	transcription_regulat	trichorhinophalangeal syndrome(毛髮鼻指節骨	
5497	TRPS1	NM_014112.1	2085	cagatgattctagccaaagttc	13624	449674	zinc binding	症候群)	



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5498	TRPS1	NM_014112.1	2296	tccataacattcacaggtacc	13633	449679	see also 5496 line			
5499	TRPS1	NM_014112.1	2552	gtcccaagcatcagatgtcaaac	13637	449687	see also 5496 line			
5500	TRPS1	NM_014112.1	2553	tcccaagcatcagatgtcaaac	13638	449688	see also 5496 line			
5501	TRPS1	NM_014112.1	3367	atgcaaatggcggatgtatg	13647	449699	see also 5496 line			
5502	TRPS1	NM_014112.1	3652	aagccacaggttcattgactaa	13656	449711	see also 5496 line			
5503	TRPS1	NM_014112.1	3970	tgcagttctgagtaataataa	13670	449722	see also 5496 line			
5504	TRPS1	NM_014112.1	4001	tcctgggaatccgcactactga	13671	449723	see also 5496 line			
5505	TRPS1	NM_014112.1	4003	ctgggaatccgcactactgagt	13672	449724	see also 5496 line			
5506	TRPS1	NM_014112.1	4062	gtgcctatccacactcaatct	13673	449726	see also 5496 line			
5507	TRPS1	NM_014112.1	4064	gccttaccacactcaatctgc	13674	449727	see also 5496 line			
5508	TRPS1	NM_014112.1	4129	tagattggcgcataaagattcc	13675	449729	see also 5496 line			
5509	TRPS1	NM_014112.1	4396	cggacaataatagcttcacaca	13683	449737	see also 5496 line			
5510	TRPS1	NM_014112.1	4428	agggcctgcataaggacaatgc	13684	449738	see also 5496 line			
5511	SCN11A	NM_014139.1	1503	tgggtgccatgggaattgacaga	262139	553621	channel	-		
5512	SCN11A	NM_014139.1	4148	aagttagtgagccaaagacatttt	262192	553692	see also 5511 line			
	SMARCAL						phosphatase, transcription_regulat			Schimke immunosensory dysplasia(免疫不全性骨異形成症 シムケ型)
5513	1	NM_014140.2	2667	ccggctttctgagaccaatttt	40084	467432	or	-		
5514	HSPC055	NM_014153.2	1331	agggacaacccgttaacaacagt	62813	480869	-	-		
5515	HSPC055	NM_014153.2	1337	caccgttaacaacaagtaattct	62814	480870	see also 5514 line			
5516	HSPC055	NM_014153.2	1556	caggccctaaagtaagtgatttc	62821	480878	see also 5514 line			
5517	HSPC055	NM_014153.2	2454	acgttaagaagtgatgaacatcc	62851	480914	see also 5514 line			
5518	HSPC055	NM_014153.2	2563	aactgttcctttgctcatagttcc	62852	480920	see also 5514 line			
5519	HSPC056	NM_014154.1	156	agctagcagctgcacactatgttg	339663	735922	-	-		
5520	HSPC056	NM_014154.1	159	tagcagctgcgcactatgttgaca	339664	735923	see also 5519 line			
5521	HSPC056	NM_014154.1	169	cactatgttgacaggtatattga	339665	735924	see also 5519 line			
5522	HSPC056	NM_014154.1	1042	tacagagaatcgtagcataaact	352220	735962	see also 5519 line			
5523	HSPC063	NM_014155.1	433	cagccagctatagcaaatgttc	339693	531438	-	-		
5524	THY28	NM_014174.2	962	atgtgtgatgtacagttgtttog	339855	753462	-	-		
5525	HSPC150	NM_014176.1	297	tcctgagaggaaccatttgaaac	229845	615103	-	-		
5526	HSPC150	NM_014176.1	417	ttggagaccatccctcaacatcg	229849	615108	see also 5525 line			
5527	HSPC159	NM_014181.1	115	gtgtacttccacagctgatagt	339922	784224	-	-		
5528	HSPC159	NM_014181.1	123	cccacagactgatagttcatttt	339924	784225	see also 5527 line			
5529	HSPC159	NM_014181.1	125	cacgactgatagttcattttgt	339925	784226	see also 5527 line			
5530	ORMDL2	NM_014182.3	68	ctggctggccctacatactctgg	339940	714703	-	-		
5531	DNCL2A	NM_014183.2	299	ttgcaaccagataaagactatttc	130771	720328	-	-		
5532	SCN8A	NM_014191.1	1710	atcccgagaaaggttttaagca	100201	514468	channel	-		
5533	SCN8A	NM_014191.1	2258	aaggacagaatcaacagataaat	100205	514473	see also 5532 line			motor endplate disease(運動終板疾患)
5534	SCN8A	NM_014191.1	4036	ctcgaactaggtggccataaagt	100224	514494	see also 5532 line			
5535	AP2A1	NM_014203.2	354	aagccttgatggctacagtaag	267547	650479	-	-		
5536	AP2A1	NM_014203.2	355	agccttggatggctacagtaaga	267548	650480	see also 5535 line			
5537	HOXD9	NM_014213.2	591	ccgagttcgcctcgtgtagtttt	5256	444899	transcription_regulat	RNA polymerase II		
5538	HOXD9	NM_014213.2	593	gagttcgcctcgtgtagttttgc	5257	444900	or transcription factor	-		

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5539	INSRR	NM_014215.1	2843	gtgtgtgtccggtcttctgatg	85815	504426	receptor activity, signal transduction, kinase related	-
5540	ITPK1	NM_014216.2	845	accgtgagtcacatcttccaac	219498	775986	kinase related, signal transduction	-
5541	RAGE	NM_014226.1	450	ctgtctctctgacactaatgt	98877	513173	-	-
5542	RAGE	NM_014226.1	454	ttctcttgacactaatatgaac	98878	513174	see also 5541 line	-
5543	RAGE	NM_014226.1	459	ttgcactaatatggaacttatg	98879	513175	see also 5541 line	-
5544	RAGE	NM_014226.1	469	atgtgaacttatgacatgaata	98880	513177	see also 5541 line	-
5545	RAGE	NM_014226.1	471	gtgaacttatgacatgaatatt	98881	513178	see also 5541 line	-
5546	RAGE	NM_014226.1	670	ctgcccggagtgtctattccaagc	98887	513184	see also 5541 line	-
5547	SLC6A11	NM_014229.1	1507	tgggaagcaaccggtcttatgata	255925	639910	betaine/GABA:sodium symporter	-
5548	SRP68	NM_014230.2	170	ggccggatcgaaggcaacaaga	54887	759511	signal recognition particle receptor	-
5549	SRP68	NM_014230.2	171	gccgagtcgaaggcaacaaga	54888	759512	see also 5548 line	-
5550	UBTF	NM_014233.1	416	togatctcagggaacatgttaaa	43206	470144	transcription regulator	-
5551	HSD17B8	NM_014234.3	617	tcctccacagggttcattgcaaca	219899	704451	estradiol 17 beta-dehydrogenase	-
5552	PTPLA	NM_014241.2	578	ctgcctattctctcacacattc	195407	588685	-	-
5553	ADAMTS2	NM_014244.1	3186	ctgccaaggcgacaagtcaatat	184174	578364	-	-
5554	CELSR1	NM_014246.1	6132	cacgcctcgtgtgaagtgatct	140532	548068	gpcr, receptor activity, signal transduction	-
5555	CELSR1	NM_014246.1	6721	atcgtcacccgccaacatgattct	140535	548075	see also 5554 line	-
5556	SLC25A13	NM_014251.1	512	tcatttaactgggattcagaat	153035	553953	-	-
5557	SLC25A13	NM_014251.1	940	aagttgacatctgttttcagtta	153046	553962	carrier	-
5558	SLC25A13	NM_014251.1	1173	gtgtatctctatgatcttctgaaa	153050	553965	see also 5556 line	-
5559	ODZ1	NM_014253.1	1315	ctggcgtttccagattactatcc	177129	576518	see also 5556 line	-
5560	ODZ1	NM_014253.1	1541	gagacaggtttcatagagtatat	177737	576523	see also 5559 line	-
5561	ODZ1	NM_014253.1	1546	agggtttcatagagtatatagato	177738	576525	see also 5559 line	-
5562	ODZ1	NM_014253.1	2207	ggctggtagagaccacaacatgga	177753	576540	see also 5559 line	-
5563	ODZ1	NM_014253.1	2306	gaggcgaccactgcacaattgc	177755	576541	see also 5559 line	-
5564	ODZ1	NM_014253.1	3627	cagccacaacaacaacactcttt	177782	576575	see also 5559 line	-
5565	ODZ1	NM_014253.1	4635	accagccaccctgaatgacatg	177815	576601	see also 5559 line	-
5566	ODZ1	NM_014253.1	4739	ttgataacaagggaactatgttta	177820	576609	see also 5559 line	-
5567	ODZ1	NM_014253.1	5708	tggagctatacctacttagaaaa	177858	576643	see also 5559 line	-
5568	ODZ1	NM_014253.1	5710	gagctatacctacttagaaaaat	177859	576644	see also 5559 line	-
5569	ODZ1	NM_014253.1	7817	ctgtgtcatatggtaaacactgg	177919	576721	see also 5559 line	-
5570	YME1L1	NM_014263.2	366	agggaacctggattatcgaact	107713	517760	-	-
5571	STK18	NM_014264.2	345	atgttacagagagtcacaataga	101478	702415	kinase related, cell cycle	-
5572	STK18	NM_014264.2	2287	ctcccaaatcactatttttaca	101531	702463	see also 5571 line	-

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5573	MAPRE2	NM_014268.1	136	gtcccaaatggcgagacaaca	120288	525085	signal_transduction	-	-
5574	MAPRE2	NM_014268.1	242	atgcgcgtcaatgtattctac	120290	525090	see also 5573 line	-	-
5575	MAPRE2	NM_014268.1	243	tggcggctcaatgtattctacc	120291	525091	see also 5573 line	-	-
5576	MGAT4B	NM_014275.2	768	gaccaaacagaccctcgattact	210492	600789	-	-	-
5577	APG-1	NM_014278.2	382	aagaactcagacccttggaatg	72218	510834	-	heat shock protein	-
5578	APG-1	NM_014278.2	458	aagcttcattggcgatcattga	72224	510836	see also 5577 line	-	-
5579	APG-1	NM_014278.2	966	aggcttagtagactactctgt	72237	510843	see also 5577 line	-	-
5580	APG-1	NM_014278.2	1198	cagggtgaaccaccttaaaag	72245	510851	see also 5577 line	-	-
5581	APG-1	NM_014278.2	1199	agggtgaaccaccttaaaagc	72246	510852	see also 5577 line	-	-
5582	APG-1	NM_014278.2	1559	aagaaggaccattgaactaga	72257	510859	see also 5577 line	-	-
5583	APG-1	NM_014278.2	1562	aagaaacctattgaactagaagc	72258	510860	see also 5577 line	-	-
5584	APG-1	NM_014278.2	1578	tagaagcattttactaattta	72259	510861	see also 5577 line	-	-
5585	OLFM1	NM_014279.2	792	aagcgaatggatgaacttagg	319967	685416	receptor_activity	-	-
5586	OLFM1	NM_014279.2	842	aagccgatgccaaattggtatt	319968	685417	see also 5585 line	-	-
5587	OLFM1	NM_014279.2	843	agcccgatgccaaattggtattg	319969	685418	see also 5585 line	-	-
5588	OLFM1	NM_014279.2	844	ggccgatgccaaattggtattgc	319970	685419	see also 5585 line	-	-
5589	SLAHBP1	NM_014281.3	1656	accagagcgtgttgataacagt	66153	478763	-	-	-
5590	C1orf9	NM_014283.2	1251	ttgcagcactaaaattggtttg	340058	776854	-	-	-
5591	C1orf9	NM_014283.2	3130	caggatcagcggcgaactgaagc	340101	776909	see also 5590 line	-	-
5592	RRP4	NM_014285.4	851	aacacggcagaggctttggaac	49472	475438	-	7S RNA binding	-
5593	FREQ	NM_014286.2	525	aagagggtggaccgagctcttgc	146515	708998	-	calcium-dependent protein kinase inhibitor	-
5594	CAPN6	NM_014289.2	1923	ccgaaaaattctgtgacagttct	187673	581429	-	calpain	-
5595	CAPN6	NM_014289.2	1974	cagcactgcgcgtgatctgaagt	187674	581430	see also 5594 line	-	-
5596	CAPN6	NM_014289.2	1995	gtctctgacctgcgtaagagagg	187675	581434	see also 5594 line	-	-
5597	PCTAIRE2	NM_014290.1	964	agcatacaaatggcatttggata	64826	479997	-	-	-
5598	BP	NM_014290.1	969	aacaatggcatttggatatctaa	64827	479998	see also 5597 line	-	-
5599	BP	NM_014290.1	1341	ttccctgaggatgccttaaaaaa	64837	480007	see also 5597 line	-	-
5600	CBX6	NM_014292.2	121	aggggtggcgatcaagtacagc	17924	636738	transcription_regulat or	chromatin binding	-
5601	TRAM1	NM_014294.3	428	tacatgcctagtcgcgataattat	302534	732922	receptor_activity	endoplasmic reticulum receptor	-
5602	TRAM1	NM_014294.3	431	atgctagtcgcgataattattca	302535	732923	see also 5601 line	-	-
5603	CAPN7	NM_014296.1	1053	accacaatctctacaatgatata	187698	581461	-	-	-
5604	CAPN7	NM_014296.1	1091	tagcataaagcagacaatagtat	187702	581462	see also 5603 line	-	-
5605	CAPN7	NM_014296.1	1092	agcataaagcagacaatagtatc	187703	581463	see also 5603 line	-	-
5606	CAPN7	NM_014296.1	2296	ttcctcacacacaccttatca	187744	581501	see also 5603 line	-	-
5607	BRD4	NM_014299.1	430	gtgtcacaagacactatggaaaca	324010	710459	-	-	-
5608	BRD4	NM_014299.1	556	aagcgttggaaaacaactattta	324014	710462	see also 5607 line	-	-
5609	BRD4	NM_014299.1	557	agcgttggaaaacaactattac	324015	710463	see also 5607 line	-	-

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5610	BRD4	NM_014299.1	805	acggtaacaaacaaactcaagc	324018	710470	see also 5607 line	
5611	BRD4	NM_014299.1	2236	acctcctgtttcggagagaaag	324023	710498	see also 5607 line	
5612	HSPC117	NM_014306.2	461	gtggtgtccgttctgtaagaacc	280741	667189	-	-
5613	HSPC117	NM_014306.2	466	gtcgcgttctgtaagaaccaattt	280742	667190	see also 5612 line	
5614	HSPC117	NM_014306.2	467	tccgttctgtaagaaccaatttta	280743	667191	see also 5612 line	
5615	HSPC117	NM_014306.2	760	ctggagcaggcaaccattatgc	280752	667197	see also 5612 line	
5616	HSPC117	NM_014306.2	768	aggcaaccattatgcagaatcc	280753	667198	see also 5612 line	
5617	RIG-I	NM_014314.2	2011	tacaagaagatcacacttaaac	65440	480413	-	-
5618	KLHDG2	NM_014315.1	458	ggcggctacaagagtaatacaagt	340150	728114	-	-
5619	ORC6L	NM_014321.2	354	aagagacctagtctacagttta	34416	463343	-	DNA binding
5620	CORO1C	NM_014325.2	998	acgtccactactcctaacacattc	116311	521395	signal transduction	actin binding
							kinase_related,	
							apoptosis	
5621	DAPK2	NM_014326.2	523	tcacacatcaagctgtatgaot	77969	499414	see also 5621 line	Alzheimer disease(アルツハイマー病)
5622	DAPK2	NM_014326.2	551	ctggctcagaatagaatagg	77970	499416	see also 5621 line	
5623	RCD-8	NM_014329.2	239	cggccatccagtcgctacaatgg	283264	806609	-	-
5624	RCD-8	NM_014329.2	1752	ctgccacaggagcttcacattt	283280	806635	see also 5623 line	
5625	RCD-8	NM_014329.2	1893	gtgagacaaagcccaagtgtgatg	283281	806637	see also 5623 line	
							cystine/glutamate	
5626	SLC7A11	NM_014331.2	421	gtgatccctcctggcattggacg	258518	641395	-	antiporter
5627	SLC7A11	NM_014331.2	1219	ctgattattcttcatacaaatg	258549	641417	see also 5626 line	
5628	IGSF4	NM_014333.2	1190	ggcgctattttgccagacataaa	340211	535837	-	-
5629	IGSF4	NM_014333.2	1191	ggcgtattttgccagacataaag	340212	535838	see also 5628 line	
5630	ZNF318	NM_014345.1	724	cccttccttggacaaacttgatga	55929	476015	-	-
							molecular_function	
							unknown	
5631	SACS	NM_014363.3	421	caggccaatgttgaatctcaaa	283608	779167	-	
5632	SACS	NM_014363.3	422	aggccaatgttgaatctcaaaag	283609	779168	see also 5631 line	
5633	SACS	NM_014363.3	423	ggccaatgttgaatctcaaaaga	283610	779169	see also 5631 line	
							DEAD/H-box RNA	
5634	NAKAP95	NM_014371.1	302	ggcaagtgcgattccgttttatac	125866	607114	-	helicase binding
5635	NAKAP95	NM_014371.1	1623	ccgcgattctctcaacaacaag	125877	607136	see also 5634 line	
5636	RNF11	NM_014372.3	516	cagtcgcagccggcgttagcttgg	38636	539918	-	zinc binding
5637	RNF11	NM_014372.3	569	ggcgccatatacaggaaacaagttc	38637	539919	see also 5636 line	
5638	CYFIP2	NM_014376.1	371	atcatgtaccaggctaaccttga	340421	557425	-	-
5639	CYFIP2	NM_014376.1	425	acggcgattgcagggtacattga	340424	557426	see also 5638 line	
5640	CYFIP2	NM_014376.1	2913	ggccttatacctctatggatccc	340466	557465	see also 5638 line	
5641	CYFIP2	NM_014376.1	2929	tggatccaagcctctcaacatig	340467	557466	see also 5638 line	
							plasma membrane	
							cation-transporting	
5642	ATP2C1	NM_014382.1	534	ttgatgatccgctcagatcacct	72975	494581	-	benign chronic pemphigus(良性慢性天疱瘡)
5643	ATP2C1	NM_014382.1	2357	agcacgagtagcagcattaac	73028	494632	see also 5642 line	
							transcription_regulat	
5644	ACAD8	NM_014384.1	501	atgaggaaacagaggcacaatttt	223810	612120	or	-
5645	LAT	NM_014387.2	726	cagccggcgagtatgtgaattgt	252717	682447	signal transduction	SH3/SH2 adaptor protein

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5646	MGC29875	NM_014388.2	919	ttcttaccgggacgtgttctacc	340490	756280	-	-
5647	MGC29875	NM_014388.2	1333	caggattggagtggaactatcttc	340499	756291	see also 5646 line	-
5648	MGC29875	NM_014388.2	1334	aggattggagtggaactatcttc	340500	756292	see also 5646 line	-
5649	PELP1	NM_014389.1	2627	aggattgacaggttattaataatc	324837	738184	-	-
5650	SND1	NM_014390.1	477	ctgtttcacagatagaacaaga	66167	481320	-	-
5651	SND1	NM_014390.1	1148	aaggcgcagcgtgagaataatgg	66184	481330	see also 5650 line	-
5652	SND1	NM_014390.1	1161	ggagatatggagagactatgttg	66185	481333	see also 5650 line	-
5653	SND1	NM_014390.1	1637	caggagccagcgtcttaagaat	66197	481339	see also 5650 line	-
5654	ANKRD1	NM_014391.2	1030	gactgaaccgtactaagaatgac	21374	525795	signal transduction	-
5655	D4S234E	NM_014392.2	399	agggtgtcacccgagaggtttaag	323545	687923	signal transduction	-
5656	D4S234E	NM_014392.2	400	gggtgtcacccgagaggtttaag	323546	687924	see also 5655 line	-
5657	STAU2	NM_014393.1	1532	cagctgaagccataggtttaaaa	48816	472205	-	-
5658	DAPP1	NM_014395.1	82	atgggcagcagcagaactctatga	172844	596976	phosphatase	-
5659	DAPP1	NM_014395.1	676	cagatgtcacccagacaacttcg	172851	596988	see also 5658 line	-
5660	DAPP1	NM_014395.1	696	tcggatccttagacctaacagaat	172852	596989	see also 5658 line	-
5661	VPS41	NM_014396.2	117	aagtatgaagggcttccatgg	272883	771728	-	-
5662	VPS41	NM_014396.2	659	aagttctgcccagacatgtatc	272896	771738	see also 5661 line	-
5663	CACNG4	NM_014405.2	475	atcggtatcatcgtctacatttc	261602	645063	voltage-gated calcium channel	-
5664	TAF5L	NM_014409.2	1342	gacgtaccgctgaggatattg	12654	749377	transcription_regulat	-
5665	TAF5L	NM_014409.2	1377	cagatgtggcgtgtgtcaaatc	12656	749379	see also 5664 line	-
5666	SIP	NM_014412.1	728	atgatagaagcagaaccataat	340556	699919	-	-
5667	AF5Q31	NM_014423.1	1515	atggggaacaggatgtgtgataag	727	744315	transcription_regulat	-
5668	AF5Q31	NM_014423.1	1567	ctctgaaccttcacaccataata	730	744318	see also 5667 line	-
5669	AF5Q31	NM_014423.1	3362	ctgtaccctgagcgtgttcaact	760	744351	see also 5667 line	-
5670	AF5Q31	NM_014423.1	3732	ggcctctcatctttaatgaagc	764	744358	see also 5667 line	-
5671	INVS	NM_014425.2	353	tgggagacaccacttatgtatt	340578	701231	-	-
5672	INVS	NM_014425.2	1320	gtcagcacctggaagttattact	340609	701245	see also 5671 line	-
5673	SNX5	NM_014426.2	275	ttctgttacaagcgaacatgaag	270843	652558	-	-
5674	SNX5	NM_014426.2	589	atgatcaggatctaatgtgttagg	270850	652571	see also 5673 line	-
5675	MORC	NM_014429.1	1160	tggaaatttcatttcagtaata	91740	508551	-	-
5676	76P	NM_014444.2	639	tcctctgtgtaggttagtag	286166	675643	structural constituent of cytoskeleton	-
5677	76P	NM_014444.2	1292	tgggtcagctggaagatcattaaa	286183	675660	see also 5676 line	-
5678	76P	NM_014444.2	1865	agctgttccttcagatcaattct	286192	675670	see also 5676 line	-
5679	ZNF364	NM_014455.1	292	gcccacaactaccggaatatata	340675	724764	-	-
5680	ZNF364	NM_014455.1	293	ccccaaactaccggaatatata	340676	724765	see also 5679 line	-
5681	ZNF364	NM_014455.1	294	ccccaaactaccggaatatata	340677	724766	see also 5679 line	-
5682	ZNF364	NM_014455.1	1096	tacatgcacgtggaactttctga	340696	724784	see also 5679 line	-
5683	PDCD4	NM_014456.3	621	acctggacaggtgtatgtgtgg	340704	619807	apoptosis	-
5684	PDCD4	NM_014456.3	1018	cagttggaggccagttattgc	340716	619817	see also 5683 line	-

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5685	PDCD4	NM_014456.3	1022	tgtgtggccagctttattgtctaga	340717	619818	see also 5683 line		
5686	AB026190	NM_014458.3	665	gagacaattagatccttctaact	128441	457892	-	-	
5687	AB026190	NM_014458.3	690	ctgggcatcgggcttttctga	128443	457893	see also 5686 line		
5688	AB026190	NM_014458.3	745	cagacaagtccaccacaataac	128445	457894	see also 5686 line		
5689	AB026190	NM_014458.3	1036	tgttagatgaggtctaaactac	128457	457907	see also 5686 line		
5690	CNTN6	NM_014461.2	1934	gagaaatctgtgggatttgatg	77341	498635	-	-	
5691	CNTN6	NM_014461.2	1943	ttgggagattgatataagaat	77342	498637	see also 5690 line		
5692	CNTN6	NM_014461.2	2976	aagccaacaccacagaaacattg	77373	498668	see also 5690 line		
5693	CNTN6	NM_014461.2	2977	agccaacaccacagaaacattgc	77374	498669	see also 5690 line		
5694	LSM3	NM_014463.1	106	atgagcgaatttatgtgaanaatg	46336	471255	-	pre-mRNA splicing factor	-
5695	LSM3	NM_014463.1	109	agcgaatttatgtgaanaatgaga	46337	471256	see also 5694 line		
5696	TINAG	NM_014464.1	913	cgcactgtaccacactttcaag	191117	582768	-	-	-
5697	TEK2	NM_014466.2	360	tggacaagtgtctgacagattta	292428	662220	-	-	-
5698	SRPUL	NM_014467.1	928	tggaggcagccttatgtgtag	304282	671835	-	-	-
5699	HSA9761	NM_014473.1	945	ggcccggttccatggacatagatg	213889	603916	-	-	-
5700	ADAMDEC1	NM_014479.2	340	tggggccagactacacatgaaca	155149	556200	signal_transduction	-	-
5701	RBMS3	NM_014483.1	306	cagcgggaaacagttgagtaaaa	54115	472932	-	-	-
5702	RBMS3	NM_014483.1	1253	tgcctcgacagcgtgtttctatt	54139	472952	see also 5701 line		
5703	RBMS3	NM_014483.1	1257	tccgacagctgtttctattgaag	54141	472953	see also 5701 line		
5704	RAB30	NM_014488.3	377	gagccacaattggaggtgttttt	110121	518269	signal_transduction	RAB small monomeric	-
5705	RAB30	NM_014488.3	406	aagacagtgagagattatggga	110123	518271	see also 5704 line		
5706	RAB30	NM_014488.3	841	atcagctattgactgtgtgttaa	110132	518281	see also 5704 line		
5707	FOXP2	NM_014491.1	548	aacaactacaagagttttacaag	4223	444203	transcription_regulat or	-	-
5708	FOXP2	NM_014491.1	1570	gccatacgaaggcgacattcaga	4237	444214	see also 5707 line		
5709	FOXP2	NM_014491.1	1580	ggcgacattcagacaatacaac	4238	444216	see also 5707 line		
5710	FOXP2	NM_014491.1	1747	tgtttacacgagcatttgctta	4241	444227	see also 5707 line		
5711	TNRC6	NM_014494.1	3742	aagtcctctctccattactctcc	66892	486925	-	-	-
5712	TNRC6	NM_014494.1	3887	ctccaggtacagcgattgttag	66893	486927	see also 5711 line		
5713	TNRC6	NM_014494.1	4311	agcaaacatgtgtctatttcaag	66902	486935	see also 5711 line		
5714	TNRC6	NM_014494.1	4542	gtcaactctggcagtgatcataaa	66908	486940	see also 5711 line		
5715	TNRC6	NM_014494.1	4544	cactctggcagtgatcataaaca	66909	486941	see also 5711 line		
5716	TNRC6	NM_014494.1	4641	accacgctgccttaactagtgc	66912	486944	see also 5711 line		
5717	TNRC6	NM_014494.1	4759	ctcctgtgtcagttacaacacacc	66913	486949	see also 5711 line		
5718	TNRC6	NM_014494.1	4875	cccttctctacgtgggataattc	66915	486950	see also 5711 line		
5719	TNRC6	NM_014494.1	4878	ttgtctacgtggagataattctcc	66916	486951	see also 5711 line		
5720	RPS6KA6	NM_014496.1	697	ttgatgaatagacatacaaaa	99906	514338	kinase_related, signal_transduction	protein serine/threonine kinase	-
5721	NP220	NM_014497.2	519	atgaattgtcagtgactcaaca	20094	474318	-	-	-
5722	NP220	NM_014497.2	864	cggcattacctaatttaccttc	20104	474336	see also 5721 line		

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5723	NP220	NM_014497.2	865	gccattactacttaattacattct	20105	474337	see also 5721 line
5724	NP220	NM_014497.2	979	atccactgaagtagctatttat	20109	474341	see also 5721 line
5725	NP220	NM_014497.2	980	tcacttgaagtagctatttatg	20110	474342	see also 5721 line
5726	NP220	NM_014497.2	1602	ctgttaacgtagatgtagtca	20133	474355	see also 5721 line
5727	NP220	NM_014497.2	5559	gtgactttggatgaagtaactga	20258	474458	see also 5721 line
5728	GOLPH4	NM_014498.2	2289	gccgagcaagtggagagaagaaa	323538	786327	-
5729	CNOT2	NM_014515.1	371	atgaggggagtagacaacatac	275364	732379	-
5730	CNOT2	NM_014515.1	398	cagtttaactcgagcttatcaca	275366	732381	see also 5729 line
5731	CNOT2	NM_014515.1	437	agccacgtcagcccaacaacagg	275367	732382	see also 5729 line
5732	CNOT2	NM_014515.1	567	ttctagcaggcaaatagcatg	275369	732387	see also 5729 line
5733	CNOT2	NM_014515.1	588	tcctagcaggcaaatagcatga	275370	732388	see also 5729 line
5734	CNOT2	NM_014515.1	614	aacagagagctgcgaagcataat	275371	732389	see also 5729 line
5735	CNOT2	NM_014515.1	620	agctgcgaagcataatagtat	275373	732390	see also 5729 line
5736	CNOT2	NM_014515.1	622	ctcgcgaagcataatagtatgc	275374	732391	see also 5729 line
5737	CNOT2	NM_014515.1	654	agcctctcgcagagccttttact	275375	732392	see also 5729 line
5738	CNOT2	NM_014515.1	658	ttctgcagagccttttactgtga	275376	732393	see also 5729 line
5739	CNOT2	NM_014515.1	725	atgaataactccttatcaagtaa	275380	732395	see also 5729 line
5740	CNOT2	NM_014515.1	1065	tcctcgagagataaaagtccaaca	275393	732415	see also 5729 line
5741	CNOT2	NM_014515.1	1159	agggatggtagcaggaccaatttg	275397	732418	see also 5729 line
5742	CNOT2	NM_014515.1	1160	gggatgtagcaggaccaaatggg	275398	732419	see also 5729 line
5743	CNOT2	NM_014515.1	1163	atggtgagcagcaaatgggaat	275399	732420	see also 5729 line
5744	CNOT2	NM_014515.1	1188	ttggcctgttaacattatcagg	275402	732423	see also 5729 line
5745	CNOT3	NM_014516.1	1845	ctcatgagacgcaaatggaag	340813	760977	transcription_regulat or
5746	CNOT3	NM_014516.1	3757	agcagggcacatcatctacttt	340828	761000	see also 5745 line
5747	CNOT3	NM_014516.1	3764	cactacatactattgactacg	340829	761002	see also 5745 line
5748	UBP1	NM_014517.2	1764	ccgatgaattcggctctataat	13851	704790	transcription_regulat or
5749	UBP1	NM_014517.2	1767	atggaattcggctctataattca	13852	704791	see also 5748 line
5750	TMOD2	NM_014548.2	222	atgagctcttggcacaactfca	119677	524703	-
5751	TMOD2	NM_014548.2	777	acctcaacaacattaagaacatt	119687	524709	see also 5750 line
5752	CARD10	NM_014550.2	2109	aggtagcagccctctacattc	129594	533190	apoptosis, kinase_related
5753	CARD10	NM_014550.2	2281	cggggacccgtgcccattatca	129595	533192	see also 5752 line
5754	OTX1	NM_014562.2	1258	cccccgaactctggactataag	8787	447527	transcription_regulat transcription factor
5755	GALNT5	NM_014568.1	2373	gtgagatgtgtggaggaaattg	211108	664128	or
5756	ARFGAP3	NM_014570.3	172	cactaacaagggtgtgtttgatt	21519	454984	-
5757	STRN3	NM_014574.2	553	aagatgttagatgtcgattaaa	122893	527431	cell_cycle
5758	STRN3	NM_014574.2	1187	ctgaaccaataaacgttttcactc	122911	527462	see also 5757 line
5759	STRN3	NM_014574.2	1278	tgcagacttgacggttaacaaatg	122914	527463	see also 5757 line
5760	STRN3	NM_014574.2	1282	gacttgacggttaacaaatgctg	122915	527464	see also 5757 line

Alzheimer disease(アルツハイマー病)

molecular\_function  
unknown

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5761	STRN3	NM_014574.2	1555	ctgtcattagctatttagttc'aa	12928	527476	see also 5757 line	-	-
5762	SCHIP1	NM_014575.1	1243	aagctcccgctgctgcttct	284106	705740	-	-	molecular_function unknown
5763	LMCD1	NM_014583.2	328	ttgctgatggactccaagtattc	281347	753876	-	-	-
5764	ERO1L	NM_014584.1	405	ggcttttcccaagactcaaaaa	143300	705919	-	-	-
5765	SLC40A1	NM_014585.3	830	atcctgatacactacttgcaaa	181285	574465	-	-	hemochromatosis(ヘモクロマトーシス)
5766	CGBP	NM_014593.1	872	ccgggaatcgtaacagtaattc	21009	736581	transcription_regulat or	zinc binding	-
5767	CGBP	NM_014593.1	873	ccgggaatcgtaacagtaattc	21010	736582	see also 5766 line	-	-
5768	MAGED2	NM_014599.4	1061	ttgaacgagcaggctattcttg	340980	742401	-	-	-
5769	HERC3	NM_014606.1	1591	ctccatgattctagaacagattt	229761	735449	-	-	-
5770	HERC3	NM_014606.1	2203	tggagccaaactgcagaattct	229785	735477	see also 5769 line	-	-
5771	HERC3	NM_014606.1	2514	tagagcaaacgtgtttoaattg	229789	735484	see also 5769 line	-	-
5772	CYFIP1	NM_014608.1	624	ccgctcagttttacgtaaaatg	341031	702124	-	-	-
5773	CYFIP1	NM_014608.1	1771	aagtggtccaagaaacattga	341055	702144	see also 5772 line	-	-
5774	CYFIP1	NM_014608.1	1850	ttctctacactcacttgataaa	341057	702148	see also 5772 line	-	-
5775	CYFIP1	NM_014608.1	1853	ttctacactcacttgataaattt	341058	702149	see also 5772 line	-	-
5776	CYFIP1	NM_014608.1	3675	ttcgcaagttccagattctcaat	341087	702192	see also 5772 line	-	-
5777	G2AN	NM_014610.3	128	ctgtggatagaagcaactttaag	202784	535424	-	-	-
5778	G2AN	NM_014610.3	632	gggataagatcaagaacatttct	202798	535439	see also 5777 line	-	-
5779	MDN1	NM_014611.1	16717	gggattctatcttggacattaaa	90848	748883	-	-	-
5780	MDN1	NM_014611.1	16721	ttctatttggacattaaagtac	90849	748884	see also 5779 line	-	-
5781	ETEA	NM_014613.1	257	cacagagctcagcagctattgt	341144	801436	-	-	-
5782	ETEA	NM_014613.1	333	ttcattccggtttacattat	341149	801440	see also 5781 line	-	-
5783	ETEA	NM_014613.1	334	tccattccggtttacattata	341150	801441	see also 5781 line	-	-
5784	ETEA	NM_014613.1	346	tactattacagatacttgata	341151	801442	see also 5781 line	-	-
5785	ETEA	NM_014613.1	347	acctattacagatacttgat	341152	801443	see also 5781 line	-	-
5786	ETEA	NM_014613.1	502	aacgtacagccaggcacttaacg	341156	801445	see also 5781 line	-	-
5787	ETEA	NM_014613.1	506	tacagccaggcacttaacgatgc	341157	801446	see also 5781 line	-	-
5788	ETEA	NM_014613.1	773	cggctagaaggccctcattcaacc	341161	801459	see also 5781 line	-	-
5789	DBC1	NM_014618.1	564	accactcaggagctactatoc	341337	709725	cell_cycle	-	bladder transitional cell carcinoma(膀胱移行上皮癌). bladder cancer(膀胱癌)
5790	DBC1	NM_014618.1	606	aaggattacaaccagatataaa	341339	709727	see also 5789 line	-	-
5791	DBC1	NM_014618.1	607	aggattacaaccagatataaaa	341340	709728	see also 5789 line	-	-
5792	DBC1	NM_014618.1	703	ggccctatgcgggagtttcaaa	341341	709729	see also 5789 line	-	-
5793	DBC1	NM_014618.1	705	ccctcatgcggagtttcaaaag	341343	709730	see also 5789 line	-	-
5794	GRIK4	NM_014619.2	1071	aggtttaccggccacattgaat	244561	632423	receptor_activity, channel,	potassium channel	-
5795	GRIK4	NM_014619.2	1073	gtctaccggccacattgaattc	244562	632424	signal_transduction	-	-
5796	NPHS2	NM_014625.1	457	gagtgaaagagataattatatt	314621	538324	see also 5794 line	-	-
5797	NPHS2	NM_014625.1	749	cacatgcctcctcactgaatt	314626	538329	-	-	nephrotic syndrome(ネフローゼ症候群)
5798	KIAA0211	NM_014630.1	2267	ccctctatgcggcaaatctcagc	29414	803171	see also 5796 line	DNA binding	-



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5799	MICAL2	NM_014632.1	559	ttgcgactgcattgaacttgc	221996	608530	-	-
5800	MICAL2	NM_014632.1	3394	gactgcgatgaaggcaatttta	222028	608557	see also 5799 line	-
5801	SH2BP1	NM_014633.1	200	cacacaactgcacatatgattg	341452	528911	-	-
5802	SH2BP1	NM_014633.1	802	ctgtctagaactcaacaataaa	341479	528933	see also 5801 line	-
5803	SH2BP1	NM_014633.1	860	ttccagagccctatactatgac	341481	528935	see also 5801 line	-
5804	SH2BP1	NM_014633.1	861	ttccagagccctatactatgac	341482	528936	see also 5801 line	-
5805	SH2BP1	NM_014633.1	1121	tgggttgagacaattgtatattt	341489	528948	see also 5801 line	-
5806	SH2BP1	NM_014633.1	1290	aagaaggtcacagaacagatgcc	341496	528952	see also 5801 line	-
5807	SH2BP1	NM_014633.1	2178	atcagcgcgttcagatgatga	341525	528970	see also 5801 line	-
5808	SH2BP1	NM_014633.1	2180	cagcgcgttcagatgatgaaa	341526	528971	see also 5801 line	-
5809	SH2BP1	NM_014633.1	2378	agctacctctctcctgaagatg	341537	528975	see also 5801 line	-
5810	RALGPS1	NM_014636.1	1775	acccgagacccagatatttc	296489	664472	-	-
5811	RALGPS1	NM_014636.1	1776	ccccgagcaccagatatttc	296490	664473	see also 5810 line	-
5812	RALGPS1	NM_014636.1	1910	aggtacctgcaaaccttatgtca	296499	664477	see also 5810 line	-
5813	CHPPR	NM_014637.2	222	gtctgaagatctgtaaggaaaa	341568	722199	-	-
5814	CHPPR	NM_014637.2	224	ctcgaagtatctgaaggaaaaatt	341569	722200	see also 5813 line	-
5815	KIAA0222	NM_014643.1	1335	gtcgggaacctgtttcaaaacc	29437	808153	-	DNA binding
5816	KIAA0222	NM_014643.1	2895	agccctagcatgcttaagaata	29448	808170	see also 5815 line	-
5817	KIAA0222	NM_014643.1	2896	gocgctagcatgcttaagaataa	29449	808171	see also 5815 line	-
5818	KIAA0222	NM_014643.1	2897	cocttagcatgcttaagaataag	29450	808172	see also 5815 line	-
5819	KIAA0635	NM_014645.1	1998	atcagcaccgactttccataaaa	341658	815832	-	-
5820	KIAA0635	NM_014645.1	2000	cagcaccgactttccataaaaag	341659	815833	see also 5819 line	-
5821	LKAP	NM_014647.1	421	agcagtcaccactctctgatattc	63309	770338	-	-
5822	LKAP	NM_014647.1	426	ttccacttctgatattcgtttct	63311	770339	see also 5821 line	-
5823	LKAP	NM_014647.1	1536	tttgttcaactgatgcaatttt	63336	770351	see also 5821 line	-
5824	IPO13	NM_014652.1	2324	ctgcgagagtgcaagatgacc	269252	651249	-	-
5825	IPO13	NM_014652.1	3019	atcctgatattgtgattcattt	269260	651258	see also 5824 line	-
5826	KIAA0406	NM_014657.1	1768	agcaagctgcccattgatcctaat	341842	738559	-	-
5827	KIAA0406	NM_014657.1	3206	aggtgagggtagcctgaataaag	341874	738593	see also 5826 line	-
5828	KIAA0406	NM_014657.1	3258	gtcaaacagcccgtaagaataca	341877	738595	see also 5826 line	-
5829	KIAA0377	NM_014659.1	2309	ggcgctatgatcagtaagatc	196990	589391	phosphatase	-
5830	KIAA0377	NM_014659.1	2310	gcgctatgatcagtaagatcc	196991	589392	see also 5829 line	-
5831	PHF14	NM_014660.1	1719	gccaaaggagttagcttttgtga	34774	453843	-	-
5832	PHF14	NM_014660.1	2542	aaggaaggcacacaaaagacatct	34798	453865	see also 5831 line	-
5833	KIAA0645	NM_014662.1	392	tggggatatgtggcgactaaga	316193	799114	-	-
5834	KIAA0645	NM_014662.1	394	gggatagtggcgactaagaaga	316194	799115	see also 5833 line	-
5835	KIAA0645	NM_014662.1	399	atgtggcgactaagaagaagttt	316195	799116	see also 5833 line	-
5836	KIAA0645	NM_014662.1	554	ttctactcggctatggtttaca	316200	799119	see also 5833 line	-
5837	KIAA0645	NM_014662.1	557	tactcggctatggtttacatat	316201	799120	see also 5833 line	-
5838	KIAA0645	NM_014662.1	725	tagaactttctatgcaaaat	316204	799126	see also 5833 line	-
5839	KIAA0645	NM_014662.1	1418	ttccatcaagtagattatgacg	316230	799158	see also 5833 line	-
5840	KIAA0645	NM_014662.1	2520	ctgagcagtagccactctatag	316246	799167	see also 5833 line	-
5841	KIAA0645	NM_014662.1	2783	gtggaattacttagatcagata	316251	799176	see also 5833 line	-
5842	JMJD2	NM_014663.1	1001	taccogctgggtgattgagtagc	29212	772815	-	-

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5843	GREB1	NM_014668.2	2116	ctctgtccagagggtgacattga	280557	705869	-	-	-
5844	GREB1	NM_014668.2	2118	ctgtccagagggtgacattgaca	280558	705870	see also 5843 line	-	-
5845	GREB1	NM_014668.2	5517	gtgtgacagatgtagacttcaacc	280602	705901	see also 5843 line	-	-
5846	KIAA0095	NM_014669.1	1872	tagtgacacaaagcctattatca	342027	773258	-	-	-
5847	KIAA0095	NM_014669.1	2154	cacctttttgacagatgatacata	342034	773265	see also 5846 line	-	-
5848	BZW1	NM_014670.1	109	cgctatcagggcagcggtttttaa	56121	476372	-	-	-
5849	KIAA0010	NM_014671.1	874	gtgtgtcagtgattgaacaaat	229946	615312	-	-	-
5850	KIAA0010	NM_014671.1	989	ctcgagttcctatagcaaaaaatt	229952	615321	see also 5849 line	-	-
5851	KIAA0010	NM_014671.1	1784	gtcgaatacctccactcttttac	229973	615344	see also 5849 line	-	-
5852	KIAA0010	NM_014671.1	1785	tccgaatcctccactcttttacc	229974	615345	see also 5849 line	-	-
5853	KIAA0010	NM_014671.1	2176	aaccactgctgtcagacaaaga	229995	615354	see also 5849 line	-	-
5854	KIAA0103	NM_014673.2	413	agcgtaagattgccattcgaaaa	324430	689647	-	-	-
5855	KIAA0103	NM_014673.2	414	gcgtaagattgccattcgaaaaag	324431	689648	see also 5854 line	-	-
5856	KIAA0103	NM_014673.2	749	gtcatattgcttctaatacaaaa	324440	689657	see also 5854 line	-	-
5857	FDEM1	NM_014674.1	1317	atgtcaacgtgaacatgttcagt	142701	547736	-	mannosyl- oligosaccharide 1、	-
5858	PUM1	NM_014676.1	328	acgctatgtgtgactactctt	53643	474986	-	mannosidase	-
5859	PUM1	NM_014676.1	529	agctctgacagtaaaaaagttt	53651	474996	see also 5858 line	-	-
5860	PUM1	NM_014676.1	691	atgtgaacagtgagtgcaattct	53653	474999	see also 5858 line	-	-
5861	PUM1	NM_014676.1	693	gtgaacagtgagtgcaattctgt	53654	475000	see also 5858 line	-	-
5862	PUM1	NM_014676.1	696	aacagtgagtgcaattctgtact	53655	475001	see also 5858 line	-	-
5863	PUM1	NM_014676.1	858	aagaagacaaggtacagtttga	53658	475005	see also 5858 line	-	-
5864	PUM1	NM_014676.1	869	gggtacattgttgaggagataagc	53659	475007	see also 5858 line	-	-
5865	PUM1	NM_014676.1	872	tacgtttgatggagataagctag	53660	475008	see also 5858 line	-	-
5866	PUM1	NM_014676.1	881	tggagataagctagagagattga	53661	475009	see also 5858 line	-	-
5867	PUM1	NM_014676.1	958	tgtatcgacacgtcaaaagatttt	53665	475010	see also 5858 line	-	-
5868	PUM1	NM_014676.1	2228	tggcagcagtgacaccttataaga	53683	475022	see also 5858 line	-	-
5869	PUM1	NM_014676.1	2535	tcctctgtttggcagataggaat	53687	475027	see also 5858 line	-	-
5870	PUM1	NM_014676.1	2537	ctctcgtttgcgatagggaatgt	53688	475028	see also 5858 line	-	-
5871	PUM1	NM_014676.1	2724	gagcgccagctgtcttccaatga	53693	475036	see also 5858 line	-	-
5872	RIMS2	NM_014677.1	1699	ctgatactgaggacaacttaga	317087	539848	-	-	-
5873	RIMS2	NM_014677.1	2091	gggaggcccaagggaatccttatgt	317098	539859	see also 5872 line	-	-
5874	RIMS2	NM_014677.1	2096	ggcagggaatccttatgttaaaa	317099	539861	see also 5872 line	-	-
5875	RIMS2	NM_014677.1	2622	gggtcctcctcagtagatagatgt	317113	539874	see also 5872 line	-	-
5876	RIMS2	NM_014677.1	2624	gtctcctcagtagatagattga	317114	539875	see also 5872 line	-	-
5877	RIMS2	NM_014677.1	2626	ctcctcagtagtagatattata	317115	539876	see also 5872 line	-	-
5878	RIMS2	NM_014677.1	2627	tcctcagtagtagatattatag	317116	539877	see also 5872 line	-	-
5879	RIMS2	NM_014677.1	2632	atcgagtagatttaggaagg	317117	539878	see also 5872 line	-	-
5880	RIMS2	NM_014677.1	3013	tccagacaagcccaatgaatgtact	317131	539880	see also 5872 line	-	-
5881	KIAA0092	NM_014679.1	878	tgcagtagtagccaattgtcagc	342132	726678	-	-	-
5882	KIAA0092	NM_014679.1	1078	aggatgaatttgggcaaatgagc	342142	726689	see also 5881 line	-	-
5883	KIAA0092	NM_014679.1	1088	tgggcaaatgagcttggatcacc	342143	726690	see also 5881 line	-	-

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5884	ULK2	NM_014683.2	580	ggcaccgcccagaaacactgattgg	107195	517407	kinase_related	-	-
5885	ULK2	NM_014683.2	1051	aggttatattgtctcaacattat	107215	517420	see also 5884 line	-	-
5886	ULK2	NM_014683.2	1187	caggagcttaattcccttagtattc	107221	517425	see also 5884 line	-	-
5887	ULK2	NM_014683.2	1188	aggagcttaattcccttagtattcc	107222	517426	see also 5884 line	-	-
5888	ULK2	NM_014683.2	1543	gtgacacggatgacttctgttttg	107228	517436	see also 5884 line	-	-
5889	ULK2	NM_014683.2	3379	ctgcagaggaactctctataat	107251	517488	see also 5884 line	-	-
5890	ULK2	NM_014683.2	3384	gagaaactcaatctataattgic	107253	517489	see also 5884 line	-	-
5891	AQR	NM_014691.1	540	ctgtatgttgatgagaggttta	342218	699742	-	-	-
5892	AQR	NM_014691.1	795	ggcacgattggaattagaattaa	342227	699750	see also 5891 line	-	-
5893	AQR	NM_014691.1	2140	ttggatccaaacacagatcaaca	342273	699787	see also 5891 line	-	-
5894	AQR	NM_014691.1	2931	cagcaggttatggagaggttaatt	342311	699816	see also 5891 line	-	-
5895	KIAA0296	NM_014699.1	1065	ggctgaatcagtagtgaaacttca	29463	778365	-	DNA binding	-
5896	KIAA0296	NM_014699.1	1067	ctgaatcagtagtgaaacttca	29464	778366	see also 5895 line	-	-
5897	KIAA0562	NM_014704.1	1771	aagagccataaaggacattgga	342607	797782	-	-	-
5898	HDAC9	NM_014707.1	737	ctccatctcacaagtacacatta	113726	525966	transcription_regulat	-	-
5899	HDAC9	NM_014707.1	823	aaggtgctgggtccagggttaaaaca	113728	525972	see also 5898 line	-	-
5900	HDAC9	NM_014707.1	1092	ttccatgaacctgctaagtcttt	113739	525978	see also 5898 line	-	-
5901	HDAC9	NM_014707.1	1844	ctggagcagcaggctgcttttatg	113750	525994	see also 5898 line	-	-
5902	HDAC9	NM_014707.1	1868	aacaggttaattaggcaagattta	113751	525997	see also 5898 line	-	-
5903	HDAC9	NM_014707.1	1870	caggttaattaggcaagatttagc	113752	525998	see also 5898 line	-	-
5904	CP110	NM_014711.3	3234	ctgttcataggctacttagtaga	278819	807694	-	molecular_function	unknown
5905	CP110	NM_014711.3	3291	cggccaaatgttgcgacaattta	278821	807700	see also 5904 line	-	-
5906	RICS	NM_014715.2	3145	cagcagcagcagcagcaactatcg	342742	795788	-	-	-
5907	RICS	NM_014715.2	3554	atgcaccagcagctcaaatatt	342747	795791	see also 5906 line	-	-
5908	RICS	NM_014715.2	5309	ctgttgttccagtagtataac	342782	795823	see also 5906 line	-	-
5909	CENTB1	NM_014716.1	414	atggcggagtgctggaaaaatt	24000	457133	-	-	-
5910	CENTB1	NM_014716.1	415	tggcggagtgctggaaaaattc	24001	457134	see also 5909 line	-	-
5911	KIAA0390	NM_014717.1	2862	gagcaacgggtggaatttccaag	342797	772879	-	-	-
5912	CLSTN3	NM_014718.1	2849	atcctgagcagcagctgattatcg	140826	546489	-	-	-
5913	SLK	NM_014720.1	744	tagagattgacatattagcatct	39504	468412	kinase_related	-	-
5914	SLK	NM_014720.1	788	aagcttctagatgcctcttatfa	39508	468415	see also 5913 line	-	-
5915	STARDB	NM_014725.2	768	ttctcaagcacottgaattctct	298327	815550	-	-	-
5916	STARDB	NM_014725.2	3344	ttctctgactggtacacaagaag	298343	815573	see also 5915 line	-	-
5917	STARDB	NM_014725.2	3347	tcctgactgtagtacaacaagtct	298344	815574	see also 5915 line	-	-
5918	STARDB	NM_014725.2	3351	gactgtagtacaacaagtctttgg	298345	815575	see also 5915 line	-	-
5919	TOX	NM_014729.1	308	ccctactattgaacaagtttga	42850	469867	-	-	-
5920	TOX	NM_014729.1	1621	tacttccaaccgactatcaga	42877	469885	see also 5919 line	-	-
5921	TOX	NM_014729.1	1629	aaccgactatcagactattatc	42879	469886	see also 5919 line	-	-
5922	TOX	NM_014729.1	1630	accgactatcagactattatca	42880	469887	see also 5919 line	-	-
5923	ZFYVE16	NM_014733.1	3798	ccctgggcaaggtttttcctat	161339	556975	-	-	-
5924	PHF16	NM_014735.2	736	ctggcttcaggaaactcaatgaag	34839	816722	transcription_regulat	-	-

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5925	RASSF2	NM_014737.1	1005	acgacgtggccagctatataaag	314993	679317	signal transduction	-	-
5926	RASSF2	NM_014737.1	1008	acgtggccagctatataaagttc	314994	679318	see also 5925 line	plasma membrane cation-transporting ATPase	-
5927	KIAA0195	NM_014738.1	3152	gtgtgagatgataaagatcatgc	86479	731802	-	transcription_regulat or, apoptosis	-
5928	BTF	NM_014739.1	388	gtctcgtagtagagatcgtatgt	275909	771018	see also 5928 line	-	-
5929	BTF	NM_014739.1	475	aggaaggggtagagggtattatc	275916	771024	see also 5928 line	-	-
5930	BTF	NM_014739.1	1296	tcctgctgtagagggtatatacc	275938	771038	see also 5928 line	-	-
5931	BTF	NM_014739.1	1460	gaggagacagaggattatagaca	275944	771042	see also 5928 line	-	-
5932	BTF	NM_014739.1	1806	atctggatgcacgagagaaaagtct	275957	771049	see also 5928 line	-	-
5933	BTF	NM_014739.1	1876	ttctcaccgtcctgaagcaaac	275962	771052	see also 5928 line	-	-
5934	BTF	NM_014739.1	2637	cacgagggaacctttttcgaatt	275982	771065	see also 5928 line	-	-
5935	BTF	NM_014739.1	2695	gacaaatactggctccaaacaact	275984	771068	see also 5928 line	-	-
5936	BTF	NM_014739.1	2703	ctggtccaaacaactcaataact	275986	771069	see also 5928 line	-	-
5937	BTF	NM_014739.1	2806	caggagatggtggtggattatt	275987	771072	see also 5928 line	-	-
5938	BTF	NM_014739.1	2839	agggaagagctcgtggacttttc	275988	771074	see also 5928 line	-	-
5939	TM9SF4	NM_014742.1	1771	gtgtacattgaaccgattgtgg	275345	655795	-	-	-
5940	TBC1D5	NM_014744.1	2168	aagaacgtttctgaaatgcagt	342933	732838	-	-	-
5941	SNX17	NM_014748.2	794	gccttcggagtcgaagagataag	126326	530202	-	receptor binding	-
5942	SNX17	NM_014748.2	797	ttcgaagtcgaagagataaagatt	126327	530203	see also 5941 line	-	-
5943	DLG7	NM_014750.3	1630	tgggtcaaacgaagcctcttata	279332	753583	-	-	-
5944	PTDSS1	NM_014754.1	395	cagccttatggcgaatgggtttt	219010	671362	-	-	-
5945	PTDSS1	NM_014754.1	1098	tccacacgtgagacagactactag	219032	671377	see also 5944 line	-	-
5946	TRIP-Br2	NM_014755.1	342	tgggctggaaggcgaataatgtgt	300964	668649	-	-	-
5947	TRIP-Br2	NM_014755.1	396	cacctacagcggcagactatct	300966	668652	see also 5946 line	-	-
5948	TRIP-Br2	NM_014755.1	401	tacagcggcagactatcttcaaac	300967	668653	see also 5946 line	-	-
5949	DHCR24	NM_014762.1	966	gcccagcaagctgaatagcattg	226559	672141	-	desmosterolosis(デスモステロロシス)、Alzheimer disease(アルツハイマー病)	-
5950	DHCR24	NM_014762.1	1610	cogagggtgtagcgaagatctgc	226568	672151	see also 5949 line	oxidoreductase	-
5951	KIAA0669	NM_014779.1	2918	cagctcggccacctctgtattca	5644	441385	-	-	-
5952	KIAA0669	NM_014779.1	3205	atgcactgttaaaatctctttca	5647	441387	see also 5951 line	-	-
5953	RB1CC1	NM_014781.1	1129	tggagtccttaaccagacatagt	343283	677374	-	-	-
5954	RB1CC1	NM_014781.1	1131	gagtgcttaaccagacatagttta	343284	677375	see also 5953 line	-	-
5955	RB1CC1	NM_014781.1	1133	gtgcctaacccagacatagttaca	343285	677376	see also 5953 line	-	-
5956	RB1CC1	NM_014781.1	1443	gactggataaatgttcaagatag	343293	677382	see also 5953 line	-	-
5957	RB1CC1	NM_014781.1	1568	tgcacaaattgataatcagaata	343299	677389	see also 5953 line	-	-
5958	RB1CC1	NM_014781.1	1681	ttgctcaggatttttttagctaat	343302	677394	see also 5953 line	-	-
5959	RB1CC1	NM_014781.1	1682	tgtcagggggttttttagctaatc	343303	677395	see also 5953 line	-	-
5960	RB1CC1	NM_014781.1	1687	agggatttttagctaatcagaag	343304	677396	see also 5953 line	-	-
5961	RB1CC1	NM_014781.1	1939	tcgtaatagagctgttagaaga	343315	677405	see also 5953 line	-	-
5962	RB1CC1	NM_014781.1	1982	tagtacagttctcagatgtact	343316	677406	see also 5953 line	-	-
5963	ALEX2	NM_014782.3	517	ctgtaactgtgtctacaataaca	343399	721687	-	-	-
5964	ALEX2	NM_014782.3	1797	aagccttaattggcccatgaataac	343406	721721	see also 5963 line	-	-

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5965	ARHGAP1 1A	NM_014783.2	3235	ttgtcagtcgctcagaagaatt	343478	806036	-	-
5966	ARHGAP1 1A	NM_014783.2	3238	gtcagtcgctcagaagaatt	343479	806038	see also 5965 line	
5967	ARHGAP1 1A	NM_014783.2	3243	tcgtcagaagaatttaattcttt	343481	806039	see also 5965 line	
5968	KIAA0258	NM_014785.1	341	gagagggccagtgatctcttc	343500	780031	-	-
5969	KIAA0258	NM_014785.1	347	ggccagtgatctcttctactcc	343501	780032	see also 5968 line	
5970	KIAA0258	NM_014785.1	402	atctggagagtcacaataac	343505	780036	see also 5968 line	
5971	DNAJC6	NM_014787.1	677	ctgggtggctgtatgttcattt	196163	812979	-	-
5972	DNAJC6	NM_014787.1	2802	ctggcgaacctatgaacaatac	196203	813015	see also 5971 line	
5973	DNAJC6	NM_014787.1	2817	aacaatacgcaaatgattttc	196204	813018	see also 5971 line	
5974	ZFXH1B	NM_014795.2	511	cggtgcaagaggcccaacaagc	14245	449939	transcription, regulat	Graves' disease(グレーブス病)
5975	ZFXH1B	NM_014795.2	544	aggaaaaacgtgtgaactatga	14246	449941	or, phosphatase	
5976	ZFXH1B	NM_014795.2	1174	taccgccagcagaagaatgaaga	14255	449951	see also 5974 line	
5977	ZFXH1B	NM_014795.2	1280	cagatcagcaccacaaatgctaacc	14256	449953	see also 5974 line	
5978	ZFXH1B	NM_014795.2	1496	ctgtaaatggccgaatgagaac	14259	449959	see also 5974 line	
5979	ZFXH1B	NM_014795.2	1502	atggccgaatgagaacaataac	14260	449960	see also 5974 line	
5980	ZFXH1B	NM_014795.2	1503	tggccgaatgagaacaataatca	14261	449961	see also 5974 line	
5981	ZFXH1B	NM_014795.2	1669	ttaaatgactaaagtcttat	14268	449970	see also 5974 line	
5982	ZFXH1B	NM_014795.2	2459	aagcatactatgctatgaacatg	14296	449975	see also 5974 line	
5983	ZFXH1B	NM_014795.2	2618	agcccttagctcccaacagtaac	14299	449977	see also 5974 line	
5984	ZFXH1B	NM_014795.2	2619	gcccgttagctcccaacagtaacc	14300	449978	see also 5974 line	
5985	ZFXH1B	NM_014795.2	2667	caggctctctgtaaacactatgg	14303	449982	see also 5974 line	
5986	ZFXH1B	NM_014795.2	2714	cagaactcccaacagctgttacg	14305	449986	see also 5974 line	
5987	ZFXH1B	NM_014795.2	2745	tccctctcagcctaacaacaaac	14309	449988	see also 5974 line	
5988	ZFXH1B	NM_014795.2	3380	atggagcacacagactacatgca	14322	450005	see also 5974 line	
5989	ZFXH1B	NM_014795.2	3469	ggcatgtatgcattgtgactatg	14325	450006	see also 5974 line	
5990	ZFXH1B	NM_014795.2	3516	ttccctctcagcacaataaacg	14328	450007	see also 5974 line	
5991	KIAA0748	NM_014796.1	960	tactctctgtgtctaagaacac	343661	809351	-	-
5992	ZNF450	NM_014797.1	285	tactttaatcgtggagaatgtac	45614	471101	protein binding	-
5993	ZNF450	NM_014797.1	740	cagttcagaatagacaacacttt	45625	471121	see also 5992 line	
5994	ELMO1	NM_014800.8	375	gtctcttgccaaccatgaatt	126479	673106	apoptosis,	
5995	ELMO1	NM_014800.8	1845	ccgattttggacaactaaaggaga	126515	673151	signal transduction	-
5996	KIAA0528	NM_014802.1	1658	cagctcatctcacatattgctat	265117	648145	see also 5994 line	-
5997	KIAA0528	NM_014802.1	1661	ctcatctcacatattgtctataac	265118	648147	see also 5996 line	-
5998	KIAA0753	NM_014804.1	652	cagatcttactgtgccaatttcg	343736	737451	-	-
5999	KIAA0753	NM_014804.1	1050	atgtttgtcactcagtttactga	343741	737459	see also 5998 line	-
6000	FARP2	NM_014808.1	124	gagatagaagaacatacagagt	322798	756918	-	-
6001	FARP2	NM_014808.1	402	ctggaattggcttgaacctatga	322807	756923	see also 6000 line	
6002	FARP2	NM_014808.1	416	aacctatgaacccatcattagg	322808	756924	see also 6000 line	
6003	FARP2	NM_014808.1	1129	ggctctctcttcagatacagttgg	322827	756940	see also 6000 line	

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6004	FARP2	NM_014808.1	3134	tcggggctgagagcaagtacaca	322852	756980	see also 6000 line		
6005	p44S10	NM_014814.1	784	tcacagcagtttcgagcagtagtctgt	192063	585734	-	proteasome	-
6006	p44S10	NM_014814.1	786	cagcagtttcgagcagtagtctgttt	192064	585735	see also 6005 line		
6007	p44S10	NM_014814.1	900	atcgatactatgttaagagaaatg	192070	585744	see also 6005 line		
6008	p44S10	NM_014814.1	939	gtcagctgctggaatcatatagg	192073	585745	see also 6005 line		
6009	p44S10	NM_014814.1	1090	aaccacagacctgatgcaga	192079	585750	see also 6005 line		
							receptor activity,		
							transcription_regulat		
							or,		
6010	TRAP100	NM_014815.1	1071	atgtcaactgtgcttttgagttc	102987	637960		molecular_function	-
6011	TRAP100	NM_014815.1	2113	gacagccacgcagatcaagtttc	102999	637975	see also 6010 line		
6012	PJA2	NM_014819.1	285	aggctgggctgtgtagactatg	35251	538775	-	-	-
6013	PJA2	NM_014819.1	1617	tccttggttacagatacaatgaag	35295	538813	see also 6012 line		
6014	TOMM70A	NM_014820.1	1541	cagcattacacagatcaacaaca	323009	687549	-	-	-
6015	TOMM70A	NM_014820.1	1551	cagatcaacacacagtttggttaa	323011	687550	see also 6014 line		
6016	TOMM70A	NM_014820.1	1881	ttgcaagaatacagattaaaa	323019	687557	see also 6014 line		
6017	KIAA0317	NM_014821.1	589	cgccagggggaccggactattta	230032	614872	-	-	-
6018	KIAA0317	NM_014821.1	590	gccgagggggaccggactatttat	230033	614873	see also 6017 line		
6019	KIAA0317	NM_014821.1	591	ccgagggggaccggactatttatg	230034	614874	see also 6017 line		
6020	KIAA0317	NM_014821.1	596	gggaccgggactatttatgactac	230035	614875	see also 6017 line		
6021	KIAA0317	NM_014821.1	611	atgactactgtcgggggaattac	230036	614876	see also 6017 line		
6022	KIAA0317	NM_014821.1	927	tcctactacaaaattttcaac	230048	614888	see also 6017 line		
6023	KIAA0317	NM_014821.1	1817	agcttcggcaggtacatatgaaa	230066	614906	see also 6017 line		
6024	KIAA0317	NM_014821.1	2243	tgcgtatgcattacaagtacttt	230075	614928	see also 6017 line		
6025	KIAA0317	NM_014821.1	2244	gcgtatgcattacaagtactttg	230076	614929	see also 6017 line		
6026	KIAA0769	NM_014824.1	292	ctgatgtcggaggtgattacagg	226967	815385	-	-	-
6027	KIAA0769	NM_014824.1	598	aacttagtcttttcaatcaaga	226980	815399	see also 6026 line		
6028	KIAA0769	NM_014824.1	973	tcacgctgtgacagtgatact	226997	815416	see also 6026 line		
6029	KIAA0769	NM_014824.1	975	cagcctgtgacagtgatactag	226998	815417	see also 6026 line		
6030	KIAA0769	NM_014824.1	1587	gactgggtaaaaggctcgaaataa	227020	815446	see also 6026 line		
6031	KIAA0769	NM_014824.1	1589	ctgggtaaaaggctcgaaataaag	227021	815447	see also 6026 line		
6032	DDX46	NM_014829.1	1363	atgtctggagcggagatttgagg	59268	483209	-	-	-
6033	DDX46	NM_014829.1	1623	aaggaggtgctgaaattatgttt	59275	483214	see also 6032 line		
6034	DDX46	NM_014829.1	1644	ttgcacacctggtcgaaatgattg	59277	483215	see also 6032 line		
6035	DDX46	NM_014829.1	1653	tggctgaatgattgacatgtag	59279	483219	see also 6032 line		
6036	DDX46	NM_014829.1	1681	aacagtggtcgggtcacaaatct	59281	483221	see also 6032 line		
6037	DDX46	NM_014829.1	1683	cagtggtcgggtcacaaatcttc	59282	483222	see also 6032 line		
6038	DDX46	NM_014829.1	1996	gagtcagagctctgctattatt	59291	483229	see also 6032 line		
6039	DDX46	NM_014829.1	1998	gtcagagctctgctattattttg	59292	483230	see also 6032 line		
6040	KIAA0352	NM_014830.1	815	ctgcagccatacaaaagttcaaa	29491	811512	-	protein binding	-
6041	TBC1D4	NM_014832.1	1679	gagtgcaagcagcagattaaac	344327	783066	-	-	-
6042	TBC1D4	NM_014832.1	1682	tgcacagcagcagattaaactgt	344328	783067	see also 6041 line		
6043	OSBP.L2	NM_014835.2	827	ctggagctgctcaaacataatga	303491	672296	-	-	-
6044	PRG1	NM_014839.2	554	ttgctggagcctgcaattacgatt	344462	797651	-	-	-
6045	PRG1	NM_014839.2	731	cagctctcattacagatcata	344470	797658	see also 6044 line		

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6046	SNAP91	NM_014841.1	2070	cactgctgacaccttattctgttg	328283	693886	-	-
6047	KIAA0274	NM_014845.4	231	tagagctagatacttctagtgg	344565	749639	-	-
6048	KIAA0274	NM_014845.4	644	acctatctagcaatttttacttt	344584	749653	see also 6047 line	-
6049	KIAA0196	NM_014846.1	2736	tggctgactctgcagagaatcc	344735	770311	-	-
6050	SRGAP2	NM_014850.1	1590	ctcagtgatagccataaactct	298263	534061	-	-
6051	SRGAP2	NM_014850.1	1592	cagtgatagccataaactctt	298264	534062	see also 6050 line	-
6052	SRGAP2	NM_014850.1	1639	aaggattcaggacaagctatacc	298265	534065	see also 6050 line	-
6053	KIAA0682	NM_014852.1	973	gcggggagcccggttcattgtca	52316	478161	-	-
6054	HHL	NM_014857.2	1066	ctgtcctaaagatagagataaa	344874	705286	-	-
6055	HHL	NM_014857.2	1148	ttctaacaagaattagctattg	344875	705292	see also 6054 line	-
6056	HHL	NM_014857.2	1196	cccaggtcgaaaactgaagaaca	344877	705293	see also 6054 line	-
6057	HHL	NM_014857.2	1198	caggtcgaaaactgaagaacagt	344878	705294	see also 6054 line	-
6058	HHL	NM_014857.2	1913	gagtgattactcgagatattc	344890	705308	see also 6054 line	-
6059	HHL	NM_014857.2	1925	tcgagattatcatcgatatttc	344891	705309	see also 6054 line	-
6060	HHL	NM_014857.2	2511	caggttcgaattataaagtacc	344904	705323	see also 6054 line	-
6061	KIAA0672	NM_014859.1	940	tactttcaaacgctaataagaagt	344914	785189	-	-
6062	ARNT2	NM_014862.1	2119	ggggactggcaactatanaacatcg	976	441785	transcription_regulat or、	transcription factor
6063	GALNA4							
6063	S-6ST	NM_014863.1	721	tggacagtaagcagatgaacttg	217472	605454	-	-
6064	CNAP1	NM_014865.1	2864	gtcgggaagccgtgcttaatgc	344995	760941	cell_cycle	-
6065	CNAP1	NM_014865.1	4623	agcctgagggaagcagctataata	345007	760965	see also 6064 line	Alzheimer disease(アルツハイマー病)
6066	CNAP1	NM_014865.1	4628	gaggcgaagctataatagataga	345008	760967	see also 6064 line	-
6067	USP52	NM_014871.1	516	ttggagcgtactcatcctttca	190206	581721	-	-
6068	ZBTB5	NM_014872.1	1273	gtgtgtagtcccgagaagataga	137145	783297	-	-
6069	KIAA0205	NM_014873.1	319	ttgtattccatctcatctctgc	216334	603503	-	acyltransferase
6070	KIAA0205	NM_014873.1	743	gagcagagatcgaaaatggattg	216345	603519	see also 6069 line	-
6071	KIAA0205	NM_014873.1	970	gcctccagtggaataatagataca	216350	603527	see also 6069 line	-
6072	KIAA0205	NM_014873.1	972	ctccagtggaataatagatacaac	216351	603528	see also 6069 line	-
6073	KIAA0205	NM_014873.1	973	tcacgtggaataatagatacaacg	216352	603529	see also 6069 line	-
6074	MFN2	NM_014874.1	1569	agctcggaattagcagattacg	345082	537549	-	-
6075	DCLRE1A	NM_014881.1	3710	ttctcccaatgatgcaaatat	345219	669769	-	-
6076	KIAA0053	NM_014882.1	1937	gtgtgagctcaatgaagaact	345246	789186	-	-
6077	FAM13A1	NM_014883.1	1614	gccctggaggacattaaaggatag	345284	679109	-	-
6078	RBM16	NM_014892.1	490	gccctggaggacaaagagataaa	53975	485735	-	-
6079	RBM16	NM_014892.1	499	atgacaagagtaaatagtgaga	53977	485736	see also 6078 line	-
6080	RBM16	NM_014892.1	1369	cgggttcgtcaagatcaagaaca	54002	485750	see also 6078 line	-
6081	RBM16	NM_014892.1	3755	tcctcatgctcggtttttgatt	54057	485776	see also 6078 line	-
6082	RBM16	NM_014892.1	3760	atgctcgggtttttgattatttt	54058	485777	see also 6078 line	-
6083	RHOBTB3	NM_014899.1	1583	gccgatgttcgcgagtgtctct	135192	539783	-	-
6084	RNF44	NM_014901.3	889	cagcatgctcgtgattgctcagt	345444	750546	-	-
6085	CPEB3	NM_014912.1	1050	aacggcttcocggaccataatgg	58824	482138	-	-
6086	CPEB3	NM_014912.1	1061	gaccgaataatggtacaactctgt	58826	482140	see also 6085 line	-
6087	CPEB3	NM_014912.1	1135	tggagaactccttaagtgatgtg	58832	482147	see also 6085 line	-

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6088	NTNG1	NM_014917.1	1122	agcctctccaggtaatacaact	282629	661937	-	-	-
6089	NTNG1	NM_014917.1	1173	cagacaacatagttatccttt	282631	661939	see also 6088 line		
6090	NTNG1	NM_014917.1	1201	tggcgctcagaccacaataatgac	282633	661942	see also 6088 line		
6091	NTNG1	NM_014917.1	1253	tggcagccctcatcagttattgc	282636	661944	see also 6088 line		
6092	NTNG1	NM_014917.1	1475	cagcttgatacaaccacaagaact	282644	661956	see also 6088 line		
6093	NTNG1	NM_014917.1	1547	gccttgagggaataattgtaga	282645	661958	see also 6088 line		
6094	ICK	NM_014920.2	640	ctgagctctgataagaataac	85587	504054	-	-	-
6095	ICK	NM_014920.2	1914	ggcttcttggaataatctcagg	85622	504084	see also 6094 line		
6096	CNK2	NM_014927.1	486	atggtctcagagcaagtagtg	180358	573648	-	-	-
6097	CNK2	NM_014927.1	1132	gggctgggtatgtatataaac	180371	573677	see also 6096 line		
6098	CNK2	NM_014927.1	1307	aggaccgcagtggtgtattctta	180377	573684	see also 6096 line		
6099	CNK2	NM_014927.1	1309	gaccgcagtggtgtattcttaac	180378	573685	see also 6096 line		
6100	CNK2	NM_014927.1	1310	accgcagtggtgtattcttaact	180379	573686	see also 6096 line		
6101	CNK2	NM_014927.1	1340	agcgcacctcagagcatgcttacc	180382	573688	see also 6096 line		
6102	CNK2	NM_014927.1	1406	ctctgcagcctcttataactaga	180383	573689	see also 6096 line		
6103	CNK2	NM_014927.1	1411	cagcctcttatacctagaagtc	180384	573690	see also 6096 line		
6104	CNK2	NM_014927.1	1757	atggcaagctacagacctatct	180390	573699	see also 6096 line		
6105	CNK2	NM_014927.1	1759	ggcaagctacagacctatctat	180391	573700	see also 6096 line		
6106	CNK2	NM_014927.1	1798	tgggtggggagctatgaagatcc	180392	573702	see also 6096 line		
6107	CNK2	NM_014927.1	2430	caggtggcttaacagaataata	180415	573719	see also 6096 line		
6108	CNK2	NM_014927.1	2749	cgccctctctggcaggatttaac	180424	573726	see also 6096 line		
6109	CNK2	NM_014927.1	2750	ggcgtctctggcaggatttaac	180425	573727	see also 6096 line		
6110	CNK2	NM_014927.1	2751	cgctctctggcaggatttaac	180426	573728	see also 6096 line		
6111	CNK2	NM_014927.1	2971	gggggcaagcctcgaagttttac	180435	573736	see also 6096 line		
6112	CNK2	NM_014927.1	2972	gggggcaagcctcgaagttttact	180436	573737	see also 6096 line		
6113	CNK2	NM_014927.1	2974	ggcaagcctcgaagttttactct	180437	573738	see also 6096 line		
6114	CNK2	NM_014927.1	3002	gagatgcgggttcaaccattgc	180438	573739	see also 6096 line		
6115	NLGN1	NM_014932.2	1387	tgcattgtttcagatcacagtaga	346003	752373	channel	-	-
6116	NLGN1	NM_014932.2	1395	ttcagatcacagtagagtagtagg	346004	752374	see also 6115 line		
6117	NLGN1	NM_014932.2	2688	gaccgcctgtccccagattaca	346036	752403	see also 6115 line		
6118	PEPP3	NM_014935.2	2601	caggcagctctcaacaaagtgg	346112	807562	-	-	-
6119	ENPP4	NM_014936.1	974	atcgaattcagcccatatttg	204851	815500	-	-	-
6120	INPP5F	NM_014937.2	480	agctctgtaagaagcatcatttt	346128	802260	-	-	-
6121	KIAA1012	NM_014939.1	215	ttcacatgagagatccttaata	272750	792134	intracellular transporter		
6122	KIAA1012	NM_014939.1	220	atgagagatccttaataatcaact	272751	792136	see also 6121 line		
6123	KIAA1012	NM_014939.1	262	aagatagcagtaagcaacattgt	272752	792139	see also 6121 line		
6124	KIAA1012	NM_014939.1	373	gtgattagcagcaggagattatga	272758	792144	see also 6121 line		
6125	KIAA1012	NM_014939.1	381	agcaggagattatgaccttaaca	272759	792145	see also 6121 line		
6126	KIAA1012	NM_014939.1	714	aactcagaggtgtctattactta	272772	792165	see also 6121 line		
6127	KIAA1012	NM_014939.1	718	cagggtgtctattacttaaat	272773	792166	see also 6121 line		
6128	KIAA1012	NM_014939.1	836	atgaagatgcccctgtactata	272775	792172	see also 6121 line		
6129	KIAA1012	NM_014939.1	1809	ttgtcaagccatgcagtttaca	272811	792209	see also 6121 line		
6130	ANKRD6	NM_014942.1	1271	aagtgatgcaggcccaataaat	346240	746715	-	-	-



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6131	ANKRD6	NM_014942.1	1302	atgtgaacctctaatcaacaagc	346243	746721	see also 6130 line		
6132	ZHX2	NM_014943.2	706	gtggttatgagtgcaaatactgc	14480	817048	transcription_regulat	-	-
6133	ZHX2	NM_014943.2	2475	ggcctgtctcgaactgagatgt	14494	817072	see also 6132 line		
6134	KIAA0843	NM_014945.1	882	tacgtgcaccagatgttcacc	117666	814188	-	-	-
6135	KIAA0843	NM_014945.1	1595	tactgcacagccctactatgc	117681	814203	see also 6134 line		
6136	SPG4	NM_014946.3	1193	tgtcaaccttataatgaatgaa	101155	515220	-	adenosinetriphosph	spastic paraplegia(痲痺性対麻痺)
6137	SPG4	NM_014946.3	1945	gtgagatgagaatattcgatta	101180	515233	see also 6136 line		
6138	KIAA1041	NM_014947.1	329	aggctgttcacatctgaactca	5727	442358	-	transcription factor	-
6139	KIAA1041	NM_014947.1	482	atgcactcttgcccaaatata	5731	442363	see also 6138 line		
6140	KIAA1041	NM_014947.1	836	aacggcctcaactccatatagc	5739	442376	see also 6138 line		
6141	KIAA1041	NM_014947.1	840	ggcctcaactccatatagcata	5741	442377	see also 6138 line		
6142	KIAA1041	NM_014947.1	849	tccatatacatagattcagatt	5743	442378	see also 6138 line		
6143	KIAA1041	NM_014947.1	933	gactaacaaagtaacattgtata	5747	442380	see also 6138 line		
6144	KIAA1041	NM_014947.1	1225	gagcagtcacttagtcaacaagg	5763	442396	see also 6138 line		
6145	KIAA1041	NM_014947.1	2007	accctcgttatctcatatcc	5790	442411	see also 6138 line		
6146	UBCE7IP5	NM_014948.2	230	agctgagtggtacgaagttagaa	324904	746819	-	-	-
6147	KIAA0907	NM_014949.1	1045	cacaacctctgcataaagt	346215	736418	-	-	-
6148	KIAA0907	NM_014949.1	1075	ctcaaccacatattccatcc	346276	736420	see also 6147 line		
6149	KIAA0907	NM_014949.1	1465	agcattgaccattcatatgact	346282	736427	see also 6147 line		
6150	KIAA0907	NM_014949.1	1477	ttcatatgactaataggtagca	346284	736430	see also 6147 line		
6151	KIAA1052	NM_014956.1	4407	tggagagagtggcgaagattttt	346343	775344	-	-	-
6152	RIPX	NM_014961.1	608	gagaccattacccttgcataat	346350	729776	-	-	-
6153	RIPX	NM_014961.1	1893	aacaggcaaaagccttaaatagt	346378	729806	see also 6152 line		
6154	DXH30	NM_014966.2	2404	ctgagacttccatcacatcaat	48212	483639	-	-	-
6155	DXH30	NM_014966.2	2594	aagccggctggagaaaatgtcc	48215	471798	see also 6154 line		
6156	KIAA1018	NM_014967.1	1499	aggctcttcaacgttaaatagg	346463	648306	-	-	-
6157	KIAA1018	NM_014967.1	1500	ggctcttcaacgttaaatagg	346464	648307	see also 6156 line		
6158	KIAA0893	NM_014969.3	364	gagaaaggaaagtggagtcataa	346513	805639	-	-	-
6159	KIAA0893	NM_014969.3	501	aaggttcgttatattatctga	346517	805643	see also 6158 line		
6160	KIFAP3	NM_014970.2	282	aggagccagatatactcaaaagg	120564	525165	signal transduction	-	-
6161	KIFAP3	NM_014970.2	285	acgccagatactcaaaaggaaa	120565	525166	see also 6160 line		
6162	KIFAP3	NM_014970.2	2294	aagtttcgtgcataactctca	120642	525216	see also 6160 line		
6163	KIFAP3	NM_014970.2	2360	cagttactgtatgggtgatcg	120645	525219	see also 6160 line		
6164	PCNX	NM_014982.1	3191	ttctactcagttcgattttatc	346623	707483	-	-	-
6165	PCNX	NM_014982.1	3623	cagacatagtcataatctatca	346643	707494	see also 6164 line		
6166	PCNX	NM_014982.1	3647	tgcctacagtagaccagttatt	346645	707496	see also 6164 line		
6167	PCNX	NM_014982.1	4459	ttcgaaatgcagccactatgatg	346680	707513	see also 6164 line		
6168	PCNX	NM_014982.1	5275	agctgcggggaactgaattcaga	346715	707529	see also 6164 line		
6169	WDFY3	NM_014991.3	6513	aggaaagctaacagattggga	161003	780374	-	-	-
6170	WDFY3	NM_014991.3	6576	ttggcaaggcatgttcaacaag	161005	780378	see also 6169 line		
6171	WDFY3	NM_014991.3	8996	ttgatctaggtctaaacaaat	161087	780426	see also 6169 line		
6172	WDFY3	NM_014991.3	9021	caccaagcttgagagattatcc	161088	780428	see also 6169 line		

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6173	WDFY3	NM_014991.3	10417	cagctcagctcagtagagaaaga	161124	780458	see also 6169 line	
6174	STK38L	NM_015000.1	1474	aagactgggtttttctcaattat	101859	515774	-	-
6175	SHARP	NM_015001.2	621	caggagagcgtccttatgaacata	65965	445757	transcription_regulat or	-
6176	SHARP	NM_015001.2	622	aggagagcgtccttatgaacatag	65966	445758	see also 6175 line	
6177	SHARP	NM_015001.2	623	ggagagcgtccttatgaacatagt	65967	445759	see also 6175 line	
6178	SHARP	NM_015001.2	690	aagacattacgacgagattatg	65971	445762	see also 6175 line	
6179	SHARP	NM_015001.2	692	gacattacgacgagattatctat	65972	445763	see also 6175 line	
6180	SHARP	NM_015001.2	697	tacgacgagattatctatagaga	65973	445764	see also 6175 line	
6181	SHARP	NM_015001.2	723	tcgagagcggacttttacaacatg	65975	445766	see also 6175 line	
6182	SHARP	NM_015001.2	842	gtgtggtacacagagattatctac	65979	445769	see also 6175 line	
6183	SHARP	NM_015001.2	4445	agctacgtgagcagagatgaaga	66070	445854	see also 6175 line	
6184	FBX021	NM_015002.1	283	caccgactacgtcaattgttgg	228531	757397	-	-
6185	FBX021	NM_015002.1	487	agcttgacctggaataactacg	228542	757405	see also 6184 line	
6186	USP33	NM_015017.2	282	ttgtcacatttgattcattgtg	189609	583555	-	-
6187	USP33	NM_015017.2	497	ttcgagtgtgtgtatgtctgc	189619	583563	see also 6186 line	
6188	USP33	NM_015017.2	2518	ttgatctcgtccagacaatttg	189684	583621	see also 6186 line	
6189	WDT01	NM_015023.2	866	tggcttatccgccagatgacc	43393	816599	-	-
6190	XPO7	NM_015024.2	119	gagcctggcccaactagagaatc	245703	653378	receptor activity	protein transporter -
6191	XPO7	NM_015024.2	120	agcctggcccaactagagaatct	245704	653379	see also 6190 line	
6192	XPO7	NM_015024.2	359	tcggaactatgtgtcacaactacc	245712	653382	see also 6190 line	
6193	XPO7	NM_015024.2	669	ttcacactttctgcaatttact	245724	653391	see also 6190 line	
6194	XPO7	NM_015024.2	1168	tcgattgtagccaacttcaaca	245733	653419	see also 6190 line	
6195	XPO7	NM_015024.2	2026	atcacacgagagcagcactttcoa	245756	653454	see also 6190 line	
6196	XPO7	NM_015024.2	2028	cacacgagcagcagcactttcatt	245757	653455	see also 6190 line	
6197	XPO7	NM_015024.2	2796	caggaccatatgaactttttg	245778	653471	see also 6190 line	
6198	POP1	NM_015029.1	312	ctcaggagatcccaagtatata	199107	724124	-	ribonuclease P
6199	POP1	NM_015029.1	315	aggagatcccaagtatataact	199109	724125	see also 6198 line	
6200	NMNAT2	NM_015039.2	523	gcccgcaccgtctcactatgtgt	209018	598664	-	-
6201	NMNAT2	NM_015039.2	1178	cggccattgtgtggattacactgt	209032	598672	see also 6200 line	
6202	KIAA0825	NM_015046.4	6196	ctcgtgtgtgcaaccttccaatgc	347416	811429	-	-
6203	KIAA0825	NM_015046.4	6958	tacaggatgcctccagacatatg	347433	811456	see also 6202 line	
6204	KIAA0825	NM_015046.4	7107	aagacgggataatgactcatata	347443	811463	see also 6202 line	
6205	KIAA0090	NM_015047.1	2757	acgcagagcgattcaactcaact	347516	760782	-	-
6206	KIAA0090	NM_015047.1	2828	ctggagctccactttgttgggtg	347522	760785	see also 6205 line	
6207	KIAA0090	NM_015047.1	2958	tggttttgccaccatgataact	347526	760788	see also 6205 line	
6208	ALS2CR3	NM_015049.1	841	ttgggacaagcctttgatcaagt	170988	773157	-	receptor binding
6209	KIAA0082	NM_015050.1	1492	ctggaaggtggccatagatgattg	63086	478297	-	-
6210	KIAA0322	NM_015052.1	961	agctgcgaattccgatttgatgc	230102	615405	-	-
6211	KIAA0322	NM_015052.1	3124	gtcgtcttcccaataactaact	230122	615438	see also 6210 line	
6212	KIAA0322	NM_015052.1	3322	ttcttcggccagccaacattttt	230129	615445	see also 6210 line	
6213	KIAA0322	NM_015052.1	3327	cgcgcagccaacatttttgaat	230130	615446	see also 6210 line	
6214	SWAP70	NM_015055.1	1336	agctggaagacatgtactacaaag	153507	468529	-	-

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6215	GASC1	NM_015061.1	767	agcccaagcttggatgctata	27445	753698	transcription_regulat	-	-
6216	GASC1	NM_015061.1	2318	tacgggttcacgaagttgtat	27471	753732	see also 6215 line	-	-
6217	GASC1	NM_015061.1	2865	gacctctatgaggtcagtttg	27487	753758	see also 6215 line	-	-
6218	ELKS	NM_015064.2	1017	aagcttccaaatcaccatttgg	347538	745957	-	-	thyroid cancer(甲状腺癌)
6219	SLAC2-B	NM_015065.1	590	caggcaaaatatacaattcacc	347599	790719	-	-	-
6220	OAZ	NM_015069.1	770	cccaagcccaacagaaacacaaag	347728	744035	-	-	-
6221	OAZ	NM_015069.1	2114	tgcaggtgcacgtcaaacacagc	347736	744049	see also 6220 line	-	-
6222	KIF1B	NM_015074.1	246	aggcaactcgaccagttatttta	87140	505228	-	motor.	Charcot-Marie-Tooth neuropathy(シャルコー・マリー・トゥースネフロパシー)
6223	KIF1B	NM_015074.1	247	ggcaactcgaccagttatttta	87141	505229	see also 6222 line	-	-
6224	KIF1B	NM_015074.1	1881	ccgtatcatcgaaggtaaaacc	87172	505262	see also 6222 line	-	-
6225	SARM1	NM_015077.1	1307	atcacccgcaagaggttcttag	246630	633513	receptor_activity	-	-
6226	SPG20	NM_015087.3	1767	gtgcagctaaatgcacgttaac	347992	754778	-	-	-
6227	SPG20	NM_015087.3	1768	tgcagctaaatgcacgttaaca	347993	754779	see also 6226 line	-	-
6228	SPG20	NM_015087.3	1770	cagctaaatgcacgttaacaat	347994	754780	see also 6226 line	-	-
6229	SPG20	NM_015087.3	1771	agctaaatgcacgttaacaatg	347995	754781	see also 6226 line	-	-
6230	MAP3K7IP	NM_015093.2	213	tacatgacctggcgcaaaaattc	219657	752416	kinase_related	-	-
6231	MAP3K7IP	NM_015093.2	379	ttctgtctacgcaatcacatga	219662	752421	see also 6230 line	-	-
6232	MAP3K7IP	NM_015093.2	384	gtctacacatcacatgactct	219663	752422	see also 6230 line	-	-
6233	MAP3K7IP	NM_015093.2	1093	ttctgcccatagcgaataaaca	219681	752445	see also 6230 line	-	-
6234	MAP3K7IP	NM_015093.2	1095	ctgccatagccaataacatt	219682	752446	see also 6230 line	-	-
6235	MAP3K7IP	NM_015093.2	1096	tgcacatagccaataaatacattc	219683	752447	see also 6230 line	-	-
6236	CAMTA2	NM_015099.2	1232	ttgacctgatgtttttctcaac	348017	800882	-	-	-
6237	CAMTA2	NM_015099.2	3383	cacttaagtttgcaactataag	348033	800896	see also 6236 line	-	-
6238	POGZ	NM_015100.1	325	tccggcctgtacaaaatgcaatg	35557	454263	-	-	-
6239	POGZ	NM_015100.1	326	coggcctgtacaaaatgcaatga	35558	454264	see also 6238 line	-	-
6240	POGZ	NM_015100.1	1501	ttcatagctctatgaatctact	35585	454297	see also 6238 line	-	-
6241	C1orf17	NM_015101.1	827	ttcgaactgcggagggaataatg	303143	671514	-	-	-
6242	NPHP4	NM_015102.2	3866	tgggtccaaagcccgagagatcaag	134269	538284	signal_transduction	-	-
6243	NPHP4	NM_015102.2	4163	cagccgcttggatcactctcaacc	134271	538287	see also 6242 line	-	-
6244	SRISNF2L	NM_015106.1	807	aagtcacagcctcgtcttttaaa	41113	468293	-	-	-
6245	SRISNF2L	NM_015106.1	1101	atgaggagacacccgcataaaaaac	41124	468304	see also 6244 line	-	-
6246	SRISNF2L	NM_015106.1	2929	caccacagacagatattgtatttc	41165	468344	see also 6244 line	-	-
6247	SRISNF2L	NM_015106.1	4054	tgggttcagctcccaatgatgatg	41175	468360	see also 6244 line	-	-
6248	KIAA1111	NM_015107.1	766	aagtcctcaatgtcattagtttg	29587	454351	transcription_regulat	-	-
6249	SMC5L1	NM_015110.1	1899	ttgaacgggttaatacaagaacc	100786	514935	-	-	-
6250	MAST205	NM_015112.1	682	agcatcaaacctggttcgaatga	90341	508783	kinase_related	-	-
6251	MAST205	NM_015112.1	1379	gcccagagactcctggtaataatc	90352	508801	see also 6250 line	-	-
6252	MAST205	NM_015112.1	2282	aacttgtatgaggttcattga	90365	508815	see also 6250 line	-	-
6253	MAST205	NM_015112.1	3603	tccaccagagctggcaagaagtat	90373	508836	see also 6250 line	-	-
6254	KIAA0276	NM_015115.1	510	ttgaaccagaaaacgttagtatg	348200	804724	-	-	-
6255	KIAA0276	NM_015115.1	820	tggagcatggccagttttgttg	348210	804739	see also 6254 line	-	-

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6256	KIAA0290	NM_015122.1	1407	ggccacgggggacacatgaacg	218840	606401	-	-
6257	MCLC	NM_015127.2	765	aagttcatggaccataaggatg	348510	757146	-	-
6258	SLOC35D1	NM_015139.1	361	ttcaactactctactatattt	259283	798586	-	sugar porter
6259	RCOR	NM_015156.1	1275	acgcgcgttcaacatagatgaag	37929	457609	-	-
6260	MLC1	NM_015166.2	509	gtgattcccaactttcagatatt	263621	747118	channel	-
6261	PTDSR	NM_015167.1	75	ttggaccgggacacactactacg	250754	637378	-	-
6262	PTDSR	NM_015167.1	582	tgcttgaatgccttagttcagg	250769	637385	see also 6261 line	-
6263	SULF1	NM_015170.1	807	tacagcaggaacgaacaaacatc	200620	592351	apoptosis	-
6264	SULF1	NM_015170.1	1247	aagcatgatttgattatgcaca	200636	592362	see also 6263 line	-
6265	SULF1	NM_015170.1	1291	cactaacgagagcattaattact	200639	592365	see also 6263 line	-
6266	TBC1D1	NM_015173.1	467	aggacttgaatccaaagcaaac	186284	708811	-	-
6267	TBC1D1	NM_015173.1	1330	cagtatggccagacatgattat	186304	708824	see also 6266 line	-
6268	KIAA0483	NM_015176.1	1078	agccatagactctcttaggaat	348949	785847	-	-
6269	RHOB1B2	NM_015178.1	1646	cgggaccacccgggttaaggagt	110717	520317	signal transduction	-
6270	SYNE2	NM_015180.3	444	cagttgctcgggataaaggatc	348988	791382	receptor activity	-
6271	CHAC	NM_015186.1	7220	aagcaaataccatatactcgtgg	272677	782533	-	-
6272	KIAA0746	NM_015187.1	1680	cagctgctgtggataccataaag	349500	777798	-	-
6273	PLCB1	NM_015192.2	665	ctgcacctgaattgatatacatc	198211	590467	cell cycle	-
6274	PLCB1	NM_015192.2	1802	aaggacaocgtgtgattatcctc	198233	590492	see also 6273 line	-
6275	PLCB1	NM_015192.2	3145	gaggtcagacaactcagttaaa	198262	590514	see also 6273 line	-
6276	KIAA0922	NM_015196.2	1601	gtggattctgaacttgcacataa	349575	777473	-	-
6277	BOP1	NM_015201.3	2136	tgccatggcatgtgtacaatga	324005	704273	-	-
6278	KIAA0874	NM_015208.2	216	tgcccaaatctgggttcacaaa	349833	720511	-	-
6279	KIAA0433	NM_015216.1	1237	atggtatgatgttaagttttat	197029	784279	phosphatase	-
6280	KIAA0433	NM_015216.1	2767	aggcattagcagatattgtatc	197088	784319	see also 6279 line	-
6281	KIAA0433	NM_015216.1	3054	cagtggaaacagagctatgatta	197080	784328	see also 6279 line	-
6282	KIAA0433	NM_015216.1	3056	gtggaaacagagctatgattatt	197081	784329	see also 6279 line	-
6283	KIAA0433	NM_015216.1	3085	ttgtcaatgagctcaactacatg	197083	784332	see also 6279 line	-
6284	AGTPBP1	NM_015239.1	761	gacactctgtctgctgctctaaa	185437	579707	-	-
6285	AGTPBP1	NM_015239.1	2129	ctgcgcaaaagtaattcaaatag	185479	579750	see also 6284 line	-
6286	CENTD2	NM_015242.2	2761	accgtgtgtgactacatcaog	24276	728341	signal transduction	-
6287	ANKS1	NM_015245.1	3146	ggcagcagatccgggaacatttc	350271	805899	-	-
6288	ANKS1	NM_015245.1	3147	agcacagatccgggaacatttc	350272	805900	see also 6287 line	-
6289	ANKS1	NM_015245.1	3150	aogagatccggaacatttcctgt	350273	805901	see also 6287 line	-
6290	CYLD	NM_015247.1	546	atcgttctgtgggcatccaagg	188193	582518	-	-
6291	BICD2	NM_015250.1	378	ggcctccaaggagcagctactacg	321247	532700	-	-
6292	KIAA0903	NM_015252.1	1950	gactgttatgacttatctctatc	350339	767837	-	-
6293	KIAA0903	NM_015252.1	3122	gaggtggagatgaacttactaac	350375	767861	see also 6292 line	-
6294	SATB2	NM_015265.1	245	ggcctggaggagtttgatgattc	10967	448299	-	-
6295	SATB2	NM_015265.1	671	ccctctccacagatgatgattt	10979	448312	see also 6294 line	-
6296	SATB2	NM_015265.1	1023	atggcccatctgataaacacaa	10993	448321	see also 6294 line	-
6297	SATB2	NM_015265.1	1490	gacacagacctccctattaagg	10996	448327	see also 6294 line	-
6298	SATB2	NM_015265.1	1493	aacagacctccctattaagggtg	10997	448328	see also 6294 line	-
6299	SATB2	NM_015265.1	1930	ccgggtctgcacaaaagatctcc	11001	448331	see also 6294 line	-

6300	ADY6	NM_015270.2	2489	ttccgcagatggcgattgatga	164960	562751	-	-
6301	TRIM2	NM_015271.2	1382	ccgaggcagccgctttaagctga	120704	525144	-	-
6302	TRIM2	NM_015271.2	1894	tggaccgaatggcacattatt	120716	525152	see also 6301 line	-
6303	NEDD4L	NM_015277.2	731	tagcgcaacttactatgtcaac	230363	616491	-	-
6304	NEDD4L	NM_015277.2	732	aggccgaacttactatgtcaacc	230364	616492	see also 6303 line	-
6305	NEDD4L	NM_015277.2	1393	ctcagctgcgaacagtaacttt	230376	616504	see also 6303 line	-
6306	NEDD4L	NM_015277.2	1395	cagctgcccaacagtaactttat	230377	616505	see also 6303 line	-
6307	NEDD4L	NM_015277.2	1396	agctgcgaacagtaactttatc	230378	616506	see also 6303 line	-
6308	NEDD4L	NM_015277.2	1996	ctgttgattgatttgaatcaga	230397	616522	see also 6303 line	-
6309	NEDD4L	NM_015277.2	1998	gtagattgatttgaatcagaga	230398	616523	see also 6303 line	-
6310	SASH1	NM_015278.2	2277	aagtcggcagcttcaagttaac	305876	785884	cell cycle	-
6311	KIAA1043	NM_015281.1	1962	ggcagcgcaatgccatgtacaca	350873	715594	-	-
6312	KIAA1043	NM_015281.1	2236	ccggagctgtaaaaatatggtg	350875	715596	see also 6311 line	-
6313	KIAA0467	NM_015284.1	4744	ggctgtactctctgtcaacaca	166967	812270	-	-
6314	PHF15	NM_015288.4	1203	ggcctggaatcgaggactatatt	34819	816433	transcription_regulat	-
6315	PHF15	NM_015288.4	1206	ctggaatcgaggactatattagc	34821	816434	see also 6314 line	-
6316	TRIM37	NM_015294.1	72	tgtcagattttccgatgttcca	160384	810777	-	-
6317	TRIM37	NM_015294.1	363	ctggacttgaagaagtgtatct	160394	810782	see also 6316 line	-
6318	TRIM37	NM_015294.1	572	atgagcgtgtcgggaatttagg	160400	810785	see also 6316 line	-
6319	TRIM37	NM_015294.1	1992	agcatcatattctgaaagata	160443	810837	see also 6316 line	-
6320	KIAA0759	NM_015305.2	719	ggcaggaatggaggagatttctcc	351321	753189	-	-
6321	FNBP4	NM_015308.1	1699	cagactgagactcgaattgcaga	351372	535392	-	-
6322	EFA6R	NM_015310.1	713	aagcttgaatggcagtagtaga	351412	798137	-	-
6323	ARHGEF12	NM_015313.1	10	gagtggaacacagctctactatca	253948	638902	-	-
6324	ARHGEF12	NM_015313.1	80	aaccgagagtcaccacacagataa	253950	638904	see also 6323 line	-
6325	ARHGEF12	NM_015313.1	81	accgagagtcaccacacagataag	253951	638905	see also 6323 line	-
6326	ARHGEF12	NM_015313.1	84	gagagtcaccacacagataagaag	253952	638906	see also 6323 line	-
6327	ARHGEF12	NM_015313.1	1208	tgtctgttatctctattcaga	253978	638923	see also 6323 line	-
6328	PUM2	NM_015317.1	97	gggacactgatgtatcaacaaaa	53719	475061	-	-
6329	PUM2	NM_015317.1	326	ttctctgtgataaaattggatt	53727	475070	see also 6328 line	-
6330	PUM2	NM_015317.1	442	aggacccaacacagagattctaaa	53730	475071	see also 6328 line	-
6331	PUM2	NM_015317.1	497	cagagagtttgcacaaatggaatgg	53731	475073	see also 6328 line	-
6332	PUM2	NM_015317.1	517	tggatgccgatitgcaaaagatttt	53732	475075	see also 6328 line	-
6333	PUM2	NM_015317.1	520	atgccgatitgcaaaagattttaa	53733	475076	see also 6328 line	-
6334	PUM2	NM_015317.1	521	tgcgatttgcacaaagattttaa	53734	475077	see also 6328 line	-
6335	PUM2	NM_015317.1	522	gccgatitgcaaaagattttaa	53735	475078	see also 6328 line	-
6336	PUM2	NM_015317.1	563	agcctctccaaactgaagatttgg	53736	475079	see also 6328 line	-
6337	PUM2	NM_015317.1	564	gcctctccaaactgaagatttga	53737	475080	see also 6328 line	-
6338	PUM2	NM_015317.1	652	aaccacttggtaagaatttcca	53740	475087	see also 6328 line	-
6339	PUM2	NM_015317.1	729	cagtttgactatctctgttaata	53746	475089	see also 6328 line	-
6340	PUM2	NM_015317.1	773	agctactgtaggcccttttgaact	53748	475092	see also 6328 line	-
6341	PUM2	NM_015317.1	1331	tccaactgcctattatgtacaga	53757	475100	see also 6328 line	-
6342	PUM2	NM_015317.1	1744	ttagcagttcttgcagtagtagt	53767	475109	see also 6328 line	-

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6343	PUM2	NM_015317.1	1798	ctgactgtacaaaagatctagt	53769	475111	see also 6328 line		
6344	PUM2	NM_015317.1	1829	agcaccatagggcaaccatttt	53770	475112	see also 6328 line		
6345	PUM2	NM_015317.1	1832	accctatagggcaaccattttaca	53772	475113	see also 6328 line		
6346	PUM2	NM_015317.1	1837	tagggcaaccattttacaatagt	53773	475114	see also 6328 line		
6347	PUM2	NM_015317.1	1869	tcctctctcccaagtcacatagg	53774	475115	see also 6328 line		
6348	PUM2	NM_015317.1	2317	aagcaactatcaatcaatagact	53790	475129	see also 6328 line		
6349	PUM2	NM_015317.1	2403	gccttgctactctattctgtgg	53796	475131	see also 6328 line		
6350	PUM2	NM_015317.1	2892	agcaatgtagtaaaaagtgtgt	53813	475150	see also 6328 line		
6351	PUM2	NM_015317.1	2896	atgtatgaaaaagtgtgtact	53814	475151	see also 6328 line		
6352	PUM2	NM_015317.1	2927	cogtgcctgagagagctttactga	53815	475152	see also 6328 line		
6353	PUM2	NM_015317.1	2930	tgcctgagagagctttactgttg	53817	475153	see also 6328 line		
6354	FEM1B	NM_015322.2	862	cgcttcgacgggtatgtctatga	248562	634847	receptor_activity, apoptosis	-	-
6355	FEM1B	NM_015322.2	1390	ttgggtgcctcctttgcaaatga	248578	634859	see also 6354 line		
6356	FEM1B	NM_015322.2	2350	cogctagacaaaagtaacaactgg	248601	634890	see also 6354 line		
6357	FEM1B	NM_015322.2	2432	gagcagttcgggctaagtacatt	248603	634891	see also 6354 line		
6358	FEM1B	NM_015322.2	2433	agcagttcgggctaagtacatta	248604	634892	see also 6354 line		
6359	KIAA0776	NM_015323.2	118	gagcggaactgcattgagattgt	351503	722381	-	-	-
6360	KIAA0776	NM_015323.2	248	tcogaggtgctcgagtaaacatt	351508	722385	see also 6359 line		
6361	KIAA0776	NM_015323.2	249	cogaggtgctcgagtaaacattg	351509	722386	see also 6359 line		
6362	KIAA0776	NM_015323.2	255	tggctgggtaaacattgtgtgato	351510	722388	see also 6359 line		
6363	KIAA0776	NM_015323.2	816	caggcagaatggctatctagaat	351525	722405	see also 6359 line		
6364	KIAA0776	NM_015323.2	817	aggcagaatggctatctagaatt	351526	722406	see also 6359 line		
6365	KIAA0776	NM_015323.2	1626	gggcagaaaaagcacaatcaagg	351544	722428	see also 6359 line		
6366	KIAA0828	NM_015328.1	1451	tggaccgtatgaagaatagctgc	204320	594613	adenosylhomocysteinase	-	-
6367	NCSTN	NM_015331.1	302	ctcaacggccactcatcagattgg	282513	691583	molecular_function unknown	-	Alzheimer disease(アルツハイマー病)
6368	NCSTN	NM_015331.1	2195	atcgtcacctactgcatcaatgc	282558	691616	see also 6367 line		
6369	HIP14	NM_015336.1	964	tagtcaatactatatttctgaaa	351634	775807	kinase_related	-	-
6370	HIP14	NM_015336.1	1146	cagttcggacaatacctcaattgt	351639	775814	see also 6369 line		
6371	HIP14	NM_015336.1	1190	aggacagagatgtagatgatgg	351641	775819	see also 6369 line		
6372	HIP14	NM_015336.1	1263	gtgatccaactagatgtgctttt	351646	775821	see also 6369 line		
6373	HIP14	NM_015336.1	1278	ttgcttttaacattcaatttc	351647	775824	see also 6369 line		
6374	HIP14	NM_015336.1	1721	tgcattgcctccttgggatatt	351667	775834	see also 6369 line		
6375	HIP14	NM_015336.1	1943	aggaaagtctggacctcagtatat	351673	775835	see also 6369 line		
6376	HIP14	NM_015336.1	2393	gtctattgaaagccattcaacc	351696	775850	see also 6369 line		
6377	HIP14	NM_015336.1	2462	tggcctcttctgctctgtatcg	351699	775852	see also 6369 line		
6378	ADNP	NM_015339.2	1810	agcaaatgcctctactgtatcgc	622	441591	transcription_regulator	-	-
6379	ADNP	NM_015339.2	2175	agctgcagtcctctataaaaaag	641	441611	or see also 6378 line		
6380	ADNP	NM_015339.2	3536	ggcagaatagcacaattgacagt	674	441651	see also 6378 line		
6381	LARS2	NM_015340.2	720	gtgttgcagattactacaagt	88291	768588	-	-	leucine-tRNA
6382	LARS2	NM_015340.2	1774	tggctactctcagatcacctga	88317	768613	see also 6381 line		

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6383	KIAA0073	NM_015342.1	1793	taccaacgccttggttgc'aat	234723	671084	-	-	-
6384	KIAA0073	NM_015342.1	1794	accaacgccttggttgcataata	234724	671085	see also 6383 line		
6385	KIAA0073	NM_015342.1	1797	aacgccttggttgcataaagc	234725	671086	see also 6383 line		
6386	JJAZ1	NM_015355.1	434	ggctgaccacagagctttcctcc	300516	668800	transcription_regulat	-	-
6387	JJAZ1	NM_015355.1	1119	cagcttttagatgggaataaga	300520	668818	or	-	-
6388	JJAZ1	NM_015355.1	1714	atcgccaacctggttgcctttt	300540	668853	see also 6386 line		
6389	KIAA0052	NM_015360.2	822	accgtgaatgtatgaagaattt	62994	478964	-	-	-
6390	KIAA0052	NM_015360.2	1064	gtctttcttcgctactattcc	63002	478974	see also 6389 line		
6391	KIAA0052	NM_015360.2	1068	ttcttcgctactattccaat	63003	478975	see also 6389 line		
6392	KIAA0052	NM_015360.2	2003	cagcattatagagcaattccagg	63025	479004	see also 6389 line		
6393	R3HDM	NM_015361.2	1000	tggattagaccacaattgtatc	65201	485603	-	-	-
6394	R3HDM	NM_015361.2	1338	ccacgacagagcgccagatatt	65215	485615	see also 6393 line		
6395	R3HDM	NM_015361.2	1345	gaggcgccagatatttagatta	65218	485617	see also 6393 line		
6396	R3HDM	NM_015361.2	1809	tacacactggcagattctgac	65236	485622	see also 6393 line		
6397	AMMECR1	NM_015365.1	631	aacgagccctaccacgtttgt	276376	708407	-	-	-
6398	AMMECR1	NM_015365.1	819	gtctctgctcactaacttgaag	276380	708417	see also 6397 line		
6399	AMMECR1	NM_015365.1	1142	cccttcagccatacaaccattat	276394	708429	see also 6397 line		
6400	AMMECR1	NM_015365.1	1145	ttcggccatacaaccattatcc	276395	708430	see also 6397 line		
6401	UNC84B	NM_015374.1	349	gaggaaatccacgacaacatgaagc	120438	810277	microtubule binding	-	-
6402	CGI-51	NM_015380.3	445	tagacaagtggatgttttgattg	278480	801850	molecular_function	-	-
6403	COG4	NM_015386.1	1233	ctgtacocatgcaggagactaatg	268573	650783	unknown	-	-
6404	KIAA1892	NM_015397.1	1430	gagaggtctcagcttggatgg	352287	727500	-	-	-
6405	DKFZP564								
6405	O0463	NM_015420.4	1412	gaggcaagtactcctttgaaaa	352557	813491	-	-	-
6406	AASDHPP	NM_015423.2	645	tggactaagctgatatgtttta	352610	723376	-	-	-
6407	AASDHPP	NM_015423.2	729	ttgcagggcttgaatttgatct	352615	723381	see also 6406 line		
6408	POLR1A	NM_015425.1	1255	gagccacgtcaatattgttttg	36027	466515	transcription_regulat	DNA-directed RNA	
6409	POLR1A	NM_015425.1	1256	agccacgtcaatattgtttga	36028	466516	or	polymerase III	-
6410	POLR1A	NM_015425.1	2357	cactgctgctatgagatctatgg	36038	466536	see also 6408 line		
6411	POLR1A	NM_015425.1	2633	caggaggttttaacatgattga	36043	466540	see also 6408 line		
6412	POLR1A	NM_015425.1	2679	accattacacgaatgagattaac	36045	466541	see also 6408 line		
6413	TARSH	NM_015429.2	639	aagcccaacacagtttgaatt	352659	804444	-	-	-
6414	DKFZP586								
6414	H2123	NM_015430.1	1190	cagtcaggaggagacaccattaca	181885	547701	-	-	-
6415	RNF19	NM_015435.3	2413	aacaacaagcagcaactcaagt	113879	705729	transcription_regulat	-	-
6416	HOM-						or	-	-
6416	TES-103	NM_015438.1	781	gcggagcgggagcagagtaaacg	352850	804382	-	-	-
6417	FTFSDC	NM_015440.3	3183	aacaagtaaaaggctgttcttaa	83863	502823	-	-	-
6418	CNOT10	NM_015442.1	510	aacacttaacacagctgaagaatc	352858	770775	-	-	-
6419	CNOT10	NM_015442.1	1128	gagatgcatttcttggaataacc	352882	770795	see also 6418 line		

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6420	CNOT10	NM_015442.1	1132	tgcattgtcttggataaaccttgg	352884	770796	see also 6418 line		
6421	ELYS	NM_015446.1	2201	tgtacaactaccctgtaattca	25817	724452	transcription_regulat	-	-
6422	MTMR9	NM_015458.3	594	ctgggtaccatcatcataaatg	353242	796959	-	-	-
6423	MTMR9	NM_015458.3	1668	atgtcttttggagcatgctttatgc	353278	796982	see also 6422 line		
6424	EHZF	NM_015461.1	1913	tccttggccctgaattatcc	264627	649021	-	-	-
6425	SIN3A	NM_015477.1	2491	gaggtctaagagagcttaactaatg	300867	669347	transcription_regulat	-	-
6426	SIN3A	NM_015477.1	2969	ctgaggtctgctacgattgttc	300872	669358	see also 6425 line		
6427	SIN3A	NM_015477.1	3106	acctatggatgttgatgtagaag	300877	669362	see also 6425 line		
6428	SIN3A	NM_015477.1	3176	aacatagactcatcacagataga	300878	669363	see also 6425 line		
6429	PVRL3	NM_015480.1	274	gagaagatacatggcaaaaagttc	353435	539470	-	-	-
6430	PVRL3	NM_015480.1	390	tgcacacattactctgcataaca	353440	539471	see also 6429 line		
6431	PVRL3	NM_015480.1	724	aggcgaattacttctgtttgtaaa	353454	539484	see also 6429 line		
6432	PVRL3	NM_015480.1	726	gcgaattacttctgtgttaaaac	353455	539486	see also 6429 line		
6433	PVRL3	NM_015480.1	1296	gacgttctgtggagactactttg	353477	539505	see also 6429 line		
6434	PVRL3	NM_015480.1	1392	ttcttaccagacagtgtaaaaa	353480	539506	see also 6429 line		
6435	ZNF385	NM_015481.1	766	cagcttgaggcacatacaaaagg	56074	476101	transcription_regulat	-	-
6436	ZNF385	NM_015481.1	770	ttgaggcacatacaaaaggact	56075	476102	see also 6435 line		
6437	MR-1	NM_015488.3	418	ccctgtctctcaggacaactaca	353508	703926	-	-	-
6438	DKFZP564	NM_015497.2	788	ctggagagatctctcgtgagaattc	353601	784096	-	-	-
6439	DKFZP564	NM_015497.2	882	atccgatacaaaaggagaatctgt	353603	784100	see also 6438 line		
6440	DKFZP564	NM_015497.2	956	ggctcgaaacctggtcatcatag	353604	784101	see also 6438 line		
6441	SH2B	NM_015503.1	3879	tggttccagtcctatttcgatat	317233	540373	-	-	-
6442	TIPARP	NM_015508.2	1921	atgtttggacaaggcaggtattt	66809	488846	-	-	-
6443	TIPARP	NM_015508.2	1957	agctactctaatcaactttctaa	66810	488848	see also 6442 line		
6444	TIPARP	NM_015508.2	2105	atgactattgttggataatttc	66812	488852	see also 6442 line		
6445	B183	NM_015509.2	393	ggggagatgctcttgactttaat	353630	723229	-	-	-
6446	GRELD1	NM_015513.2	942	gtgtggccttgctgactttggagg	140956	546607	-	-	heart disease(心臓疾患)
6447	DKFZP566	NM_015523.1	706	accgaaataacatcttccaagaaa	161829	591399	-	-	-
6448	E144	NM_015527.2	298	ctgcgcaagacaggacaagtatgg	236088	620679	-	-	-
6449	DKFZP434	NM_015527.2	501	agcctggcagtaacctgtctaata	236089	620682	see also 6448 line		
6450	DKFZP434	NM_015527.2	506	ggcagtaacctgtctaataagcaag	236091	620683	see also 6448 line		
6451	DKFZP566	NM_015528.1	681	gtcaatgggtcagtcctttattgc	191334	584760	-	-	-



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6452	MOXD1	NM_015529.1	634	tggcgcaaatgtttaagattcc	163740	560929	-	-	-
6453	MOXD1	NM_015529.1	1209	aggcatcagctgcgtcattttc	163750	560938	see also 6452 line		
6454	MOXD1	NM_015529.1	1213	atcaggctgcgtcattttgaaa	163751	560940	see also 6452 line		
6455	DKFZP586	NM_015533.2	384	cactgggagtcggctcaacttcg	208575	598154	-	-	-
6456	DKFZP564	NM_015534.3	487	tcogcatctactctggttacaag	25160	813056	-	-	-
6457	DKFZP564	NM_015534.3	488	ccgatctactctgtttacaaga	25161	813057	see also 6456 line		
6458	DKFZP564	NM_015534.3	507	aagatcaacagtggtggttaaacg	25162	813058	see also 6456 line		
6459	DKFZP564	NM_015534.3	959	aacgagctgtcgatgtcttata	25171	813064	see also 6456 line		
6460	DNAPT6	NM_015535.1	389	cagcatcaaggcaacaagaatgc	353723	754643	-	-	-
6461	THEA	NM_015547.2	1562	aggcgaagccttgacaaatgg	200091	591732	-	-	-
6462	BPAG1	NM_015548.2	11601	ttcagcatgggattctctaaata	115749	522309	cell_cycle、 transcription_regulat	-	epidermolysis bullosa(表皮水疱症)
6463	ZNF451	NM_015555.1	737	gtctataatgcactgttaacaag	265982	748345	or	-	-
6464	ZNF451	NM_015555.1	738	tcctataatgcactgttaacaag	265983	748346	see also 6463 line		
6465	SIPA1L1	NM_015556.1	627	tagcgttcaagccaggaaatag	284258	679918	-	-	-
6466	SIPA1L1	NM_015556.1	628	agcgttcaagccaggaaataga	284259	679919	see also 6465 line		
6467	SIPA1L1	NM_015556.1	630	ccgttcaagccaggaaatagaaa	284260	679920	see also 6465 line		
6468	SIPA1L1	NM_015556.1	708	ttctgttagcctcaattccaatg	284262	679921	see also 6465 line		
6469	SIPA1L1	NM_015556.1	1886	cagtggtgtggagcctggaagg	284293	679944	see also 6465 line		
6470	SIPA1L1	NM_015556.1	3729	tcctgttggagacatctatgtga	284332	679973	see also 6465 line		
6471	SSI18L1	NM_015558.3	573	acgtgtctggagcccaacatcaac	169988	803922	-	-	-
6472	SSI18L1	NM_015558.3	577	gtctggagcaacatcaacatgc	169989	803923	see also 6471 line		
6473	OPA1	NM_015560.1	1299	aggaaactattttcagtaoagc	109724	519748	apoptosis	-	optic atrophy(遺伝性視神経萎縮症)、 glaucoma(緑内障)
6474	OPA1	NM_015560.1	2541	atccaaagcttgattgaagatact	109760	519784	see also 6473 line		
6475	LRRTM2	NM_015564.1	442	ccctatgctggcagcaatataatg	326940	692545	-	-	-
6476	LRRTM2	NM_015564.1	607	gtccctgaggcaacaatcaatca	326944	692550	see also 6475 line		
6477	LRRTM2	NM_015564.1	673	ttgctccacttagatcaaatc	326947	692555	see also 6475 line		
6478	LRRTM2	NM_015564.1	674	tggctccacttagatcaaatca	326948	692556	see also 6475 line		
6479	LRRTM2	NM_015564.1	776	tacttgccaaacacacactttac	326953	692564	see also 6475 line		
6480	LRRTM2	NM_015564.1	885	tgcagacacttgcaattacgttc	326955	692569	see also 6475 line		
6481	LRRTM2	NM_015564.1	1053	accagctgacgaagattatttt	326962	692579	see also 6475 line		
6482	LRRTM2	NM_015564.1	1058	ctgacgaagattattttgctca	326964	692580	see also 6475 line		
6483	LRRTM2	NM_015564.1	1537	tccaaacacgaatatacaaaaa	326980	692592	see also 6475 line		
6484	LRRTM2	NM_015564.1	1813	atcccaaacacgaactccatgt	326989	692597	see also 6475 line		
6485	LRRTM2	NM_015564.1	1924	gtgtcagcagctgccatacaaa	326995	692605	see also 6475 line		
6486	KIAA0820	NM_015569.1	397	tgcaggtttctacattgcaaa	109416	518450	-	-	-
6487	KIAA0820	NM_015569.1	398	gccgagttctacattgcaaa	109417	518451	see also 6486 line		

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6488	TNRC15	NM_015575.1	500	ctcctagaggctgaagtcttcca	354113	760278	-	-	-
6489	TNRC15	NM_015575.1	3470	gtgtgtctaaccggcagaataaag	354168	760332	see also 6488 line		
6490	TNRC15	NM_015575.1	3474	gtctaaccggcagaataaagaag	354169	760333	see also 6488 line		
6491	TNRC15	NM_015575.1	3584	atgccttaatacggcaataaac	354171	760337	see also 6488 line		
6492	TNRC15	NM_015575.1	3585	tgccttaatacggcaataaac	354172	760338	see also 6488 line		
6493	TNRC15	NM_015575.1	3587	cccttaatacggcaataaacttg	354173	760339	see also 6488 line		
6494	TNRC15	NM_015575.1	3677	ggcctatttagagatacttct	354177	760345	see also 6488 line		
6495	TNRC15	NM_015575.1	3962	tccgagcagatccagtttatta	354183	760352	see also 6488 line		
6496	CAST	NM_015576.1	2766	tggccaacctccgattgagagg	354226	799416	-	-	-
6497	PDIP38	NM_015584.2	386	ctggcaggccagactgatgaac	354330	724861	-	-	-
6498	PDIP38	NM_015584.2	514	ctcgtgactgccacatatct	354333	724665	see also 6497 line		
6499	PGM3	NM_015599.1	947	acgttaattagcagtttccttaa	234972	619884	-	phosphoacetylglucosamine mutase	Alzheimer disease(アルツハイマー病)
6500	PGM3	NM_015599.1	1410	cagacaggagaggtattagcaat	234993	619897	see also 6499 line		
6501	C20orf22	NM_015600.2	919	tccagatgcccttatattggaat	235970	621268	-	-	-
6502	DKFZP564	NM_015601.2	596	cagagtagccagaaataattaaaa	228158	614980	-	-	-
6503	G092	NM_015601.2	812	aggaggagcccatagtttgtac	228170	614990	see also 6502 line		
6504	DKFZP564	NM_015601.2	904	atgataggtagtttcctaattta	228174	614996	see also 6502 line		
6505	DKFZP564	NM_015601.2	909	aggtagtttcctaattactaaa	228176	614997	see also 6502 line		
6506	DKFZP547	NM_015607.2	749	ctccccgaatgggcttaagaaga	354479	713044	-	-	-
6507	DKFZP547	NM_015607.2	751	ccccgaatgggcttaagaagagg	354480	713045	see also 6506 line		
6508	DKFZp566	NM_015609.1	78	cagcggcaggaaatccaaatct	354587	785151	-	-	-
6509	DKFZP434	NM_015610.1	346	gtcccttagctgttgtagtaagt	354590	801464	-	-	-
6510	DKFZP566	NM_015630.2	253	ggcagagagcaacgtcaactatt	354639	777132	-	-	-
6511	DKFZP566	NM_015630.2	259	gagcaacgtcaactattacaatc	354640	777134	see also 6510 line		
6512	DKFZP566	NM_015630.2	344	gacaacgagcaaccagattatga	354641	777137	see also 6510 line		
6513	DKFZP566	NM_015630.2	476	cagcttgaacttcaagaagc	354643	777145	see also 6510 line		
6514	DKFZP566	NM_015630.2	886	tagatcagaaaaagagttatag	354660	777156	see also 6510 line		
6515	DKFZP566	NM_015630.2	1000	ttctgatgtggttcgtcaaaaga	354663	777158	see also 6510 line		

6516	DKFZP566 F2124	NM_015630.2	1088	ttgcctgtgatcaataagagtga	354665	777160	see also 6510 line		
6517	DKFZP566 F2124	NM_015630.2	1225	gogggcaggatgccagattatg	354669	777162	see also 6510 line		
6518	DKFZP566 F2124	NM_015630.2	1546	tagactgtctcttctgaaatat	354683	777173	see also 6510 line		
6519	DKFZP566 F2124	NM_015630.2	1883	agcacctctgactgtatgtctaa	354692	777185	see also 6510 line		
6520	DKFZP566 F2124	NM_015630.2	1885	cacctctgactgtatgtctaaaa	354693	777186	see also 6510 line		
6521	DKFZP566 F2124	NM_015630.2	1886	acctctgactgtatgtctaaac	354694	777187	see also 6510 line		
6522	DKFZP566 F2124	NM_015630.2	2275	accatcgccaacagccttaaaac	354704	777196	see also 6510 line		
6523	DKFZP566 F2124	NM_015630.2	2278	atcgccaacagccttaaaacttg	354705	777197	see also 6510 line		
6524	DKFZP564 D116	NM_015631.1	1040	atgtgccttactataacttc	354723	723175	-	-	-
6525	EIF2B4	NM_015636.2	513	aggttctcacacaaaggattat	56365	476463	-	translation initiation factor	leukoencephalopathy(白質脳症)、 ovarioleukodystrophy(卵巢白質萎縮症)
6526	TRPC4AP	NM_015638.1	450	ctctatccggggcagaaactga	103259	516733	-	-	-
6527	TRPC4AP	NM_015638.1	600	aagtaagaagacattctacaaa	103264	516738	see also 6526 line		
6528	TRPC4AP	NM_015638.1	691	ctgagttcttagtattccaattt	103269	516743	see also 6526 line		
6529	TRPC4AP	NM_015638.1	696	ttccttagtattccatttcgactc	103270	516745	see also 6526 line		
6530	TRPC4AP	NM_015638.1	793	cacacgttcttgcacaaatgc	103272	516749	see also 6526 line		
6531	TRPC4AP	NM_015638.1	1787	atgcattcaagagattccaataa	103290	516763	see also 6526 line		
6532	ZNF288	NM_015642.1	2420	ctcgtctgcccagcaaatgttg	45011	470744	transcription_regulat or	protein binding	-
6533	ZNF288	NM_015642.1	2421	tcctgtgcccagcaaatgttga	45012	470745	see also 6532 line		
6534	ABCA12	NM_015657.3	660	cagcttactgtaccatgacaatg	68131	786512	-	-	ichthyosis congenita(先天性魚鱗癬)
6535	ABCA12	NM_015657.3	1455	aggcaaccacacccaaggattttt	68166	786544	see also 6534 line		
6536	AAAS	NM_015665.3	1147	gcccactgtctgttcaactgtatg	276335	769490	-	molecular_function unknown	-
6537	XTP3TPB	NM_015701.2	1197	ttctgtatgcaaacatgtatca	355180	718558	-	-	-
6538	XTP3TPB	NM_015701.2	1417	aggfgactgtaaaactaaagtgc	355184	718568	see also 6537 line		
6539	DJ1042K1	NM_015705.3	1048	tgcgcactctgggaacctgttttc	355218	750709	-	-	-
6540	MINK	NM_015716.2	4059	aocgtaactgcatcatgaactgg	297639	507581	kinase_related	-	-
6541	NOX3	NM_015718.1	1655	ttcaagcagatgacctacaatca	227200	815293	-	-	-
6542	H326	NM_015726.2	745	gccatactgtgtgtcaatacc	355241	770429	-	DNA binding	-
6543	H326	NM_015726.2	1324	gtggatccaaagcaaacatcacc	355250	770434	see also 6542 line		
6544	H326	NM_015726.2	1480	cagtaaaaggcgtcaattctat	355252	770437	see also 6542 line		
6545	MBD1	NM_015845.2	1135	ctgctgcgacaagcccaaatcgg	6345	461385	transcription_regulat or	-	-

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6546	C6orf32	NM_015864.2	530	caggtgtaactctcttcattgaaa	355262	802498	-	-	-	-
6547	ZT86	NM_015871.2	300	ccgattccaaagaccacagaagaaa	46005	453549	-	transcription co- repressor	-	-
6548	OAZIN	NM_015878.3	1453	ttggaaagaggttaatacatgttat	236972	622404	-	-	-	-
6549	OAZIN	NM_015878.3	1457	aagagggttaatacatgttatcagc	236974	622405	see also 6548 line	-	-	-
6550	OAZIN	NM_015878.3	1841	atgtggagagattgcttcttctt	236984	622415	see also 6548 line	-	-	-
6551	OAZIN	NM_015878.3	1843	gtggagagattgcttcttcttga	236985	622416	see also 6548 line	-	-	-
6552	SIAT8C	NM_015879.1	2302	tcggacacgcgtttttacatcaaaa	213030	600889	-	-	-	-
6553	SIAT8C	NM_015879.1	2334	ttcttcagcatgtcgtgtgaata	213031	600891	see also 6552 line	-	-	-
6554	SIAT8C	NM_015879.1	2339	cagcatgtcgtgtgaataaaaaa	213032	600893	see also 6552 line	-	-	-
6555	SIAT8C	NM_015879.1	2340	agcatgtcgtgtgaataaaaaat	213033	600894	see also 6552 line	-	-	-
6556	SIAT8C	NM_015879.1	2959	atgtgaagagatccactgtgtg	213052	600914	see also 6552 line	-	-	-
6557	MBTPS2	NM_015884.1	630	agcagctattagggaacaaagtic	157701	558180	-	zinc binding	-	-
6558	MBTPS2	NM_015884.1	740	cagtcacagcagctaaagatatatt	157704	558186	see also 6557 line	-	-	-
6559	MBTPS2	NM_015884.1	745	cagcagctaaagatatattgtgc	157705	558187	see also 6557 line	-	-	-
6560	MBTPS2	NM_015884.1	1057	ttccagtttagagcatcaaaaacg	157714	558202	see also 6557 line	-	-	-
6561	PII5	NM_015886.1	896	ttggtcaagccatgtgtatgtga	292786	695400	-	-	-	-
6562	HOOK1	NM_015888.3	343	acctgtcaagatgtcaaacagc	355302	685025	-	-	-	-
6563	HOOK1	NM_015888.3	380	gccatggcacaagttcttcacaa	355303	685026	see also 6562 line	-	-	-
6564	HOOK1	NM_015888.3	430	ttggttaagccgaattaaagagg	355307	685029	see also 6562 line	-	-	-
6565	HOOK1	NM_015888.3	1042	cagcgtgaagctgcaaaaagatg	355328	685041	see also 6562 line	-	-	-
6566	AFS2	NM_015908.3	1636	tcgaccgcagttgttaacattaaa	276983	667120	-	-	-	-
6567	TLP19	NM_015913.2	534	ctcccataattttgttatggtaa	265878	647604	-	-	-	-
6568	LOC51061	NM_015914.2	618	ctgtatcatcggagtttggacc	265345	647791	-	-	-	-
6569	LOC51061	NM_015914.2	629	gagtttggaccacatcgaataca	265346	647793	see also 6568 line	-	-	-
6570	SPG3A	NM_015915.2	1575	ttggttggacatcatagctagc	40906	468191	-	spastic paraplegia(痲性对麻痺)	-	-
6571	C6orf82	NM_015921.1	538	gtgaggtcgtgatgattgataaa	355491	647597	-	-	-	-
6572	H105E3	NM_015922.1	537	gagctcttttatagagtgaaatta	219912	607298	-	3-beta-hydroxy- delta(5)-steroid dehydrogenase	-	-
6573	LISCH7	NM_015925.3	2078	tggccctgagtcgggaaagttta	227043	614352	receptor activity	-	-	-
6574	LISCH7	NM_015925.3	2079	ggccctgagtcgggaaagtttag	227044	614353	see also 6573 line	-	-	-
6575	LISCH7	NM_015925.3	2080	ggccctgagtcgggaaagtttagt	227045	614354	see also 6573 line	-	-	-
6576	NOP5/NO	NM_015934.3	1464	ctgttctaaaaaacgcaaaatag	180325	472567	-	snoRNP binding	-	-
6577	CGI-07	NM_015938.2	851	ctgttgaaattgttccaatagtc	264381	648755	-	-	-	-
6578	CGI-07	NM_015938.2	860	ttgttccaatagtcgaaggaataat	264382	648757	see also 6577 line	-	-	-
6579	CGI-07	NM_015938.2	1263	ggccaactgttaacttaaatgatg	264390	648770	see also 6577 line	-	-	-
6580	CGI-07	NM_015938.2	1538	atgaagagagcacctcgaattagt	264396	648776	see also 6577 line	-	-	-
6581	CGI-07	NM_015938.2	1542	agggaagcctcgaattagctctgg	264397	648777	see also 6577 line	-	-	-
6582	ATP6V1H	NM_015941.1	699	atggaagagcagtgacttaaaatta	73368	494937	-	hydrogen- translocating V- type ATPase	-	-
6583	ATP6V1H	NM_015941.1	700	tggaaagcagtgacttaaaattac	73369	494938	see also 6582 line	-	-	-

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6594	ATP6V1H	NM_015941.1	704	aggcagtgacttaataactatt	73370	494939	see also 6582 line	
6595	ATP6V1H	NM_015941.1	982	tggcattcagtcctcaaatgtgt	73380	494953	see also 6582 line	
6596	CGI-14	NM_015944.2	244	cagatcaaacagtgatttggtgt	191321	593771	-	-
6597	SLC35B3	NM_015948.2	710	tagtcagtttgcttttactcc	355567	750516	-	-
6598	CGI-26	NM_015954.1	704	atggcagagtcagattatttaa	233987	618329	-	-
6599	MMRP19	NM_015957.1	414	gtgatcataccaccactctaaagc	355609	709093	-	-
6599	MRPS7	NM_015971.2	320	atcccttgatgacagaagaat	286131	658906	-	-
6599	CAMK2A	NM_015981.2	1141	gtccagttccagcgttcagtgtaa	74973	496980	kinase related	-
6599	CAMK2A	NM_015981.2	1144	cagttccagagttcagtttaattgg	74974	496981	see also 6591 line	-
6599	CAMK2A	NM_015981.2	1147	ttccagcgttcagtttaattgaat	74975	496982	see also 6591 line	-
6599	CAMK2A	NM_015981.2	1148	ttccagcgttcagtttaattgaatc	74976	496983	see also 6591 line	-
6599	UCHL5	NM_015984.1	270	aagccagttcagtggttaatttt	190723	584236	ubiquitin C-terminal hydrolase	-
6599	CRLF3	NM_015986.2	876	gtctgagcagtcgaagaataata	248113	634637	-	-
6599	CGI-41	NM_015997.2	717	atgctcatcatcagcgaatttttc	355706	770517	-	-
6599	CGI-41	NM_015997.2	718	tgcctacatcatcgaatttttca	355707	770518	see also 6597 line	-
6599	CGI-41	NM_015997.2	968	agccagagctcccacttaacagc	355709	770519	see also 6597 line	-
6600	ADIOP1	NM_015999.2	791	gtctctggagctttttccaaact	325963	691456	receptor activity	-
6600	ADIOP1	NM_015999.2	1033	gcccaccatgcacttactatcg	325968	691459	see also 6600 line	-
6602	TRNT1	NM_016000.2	508	atctcactataattctatgttt	55527	475908	-	-
6603	C20orf9	NM_016004.1	55	gagctgaggagaccattctttt	355783	771876	-	-
6604	C20orf9	NM_016004.1	56	agctgcggagtgaccattctttc	355784	771877	see also 6603 line	-
6605	C20orf9	NM_016004.1	59	tgcggagtgaccattcttttcaat	355785	771878	see also 6603 line	-
6606	C20orf9	NM_016004.1	363	tggatcatggttaataatgatg	355789	771888	see also 6603 line	-
6607	C20orf9	NM_016004.1	638	tggctttctactcaataaagaac	355795	771896	see also 6603 line	-
6608	SH3GLB1	NM_016009.2	227	ctgaatgtaccataaattggaca	355827	708314	apoptosis	-
6609	SH3GLB1	NM_016009.2	794	atgcacagtggtaccagttatgt	355838	708328	see also 6608 line	-
6610	CGI-62	NM_016010.1	479	aagaacagcagcagcagctattagt	355859	782795	-	-
6611	CGI-62	NM_016010.1	482	aacagcagcagcagctattagta	355860	782796	see also 6610 line	-
6612	CGI-62	NM_016010.1	484	caggcagcagctattatagtaaga	355861	782797	see also 6610 line	-
6613	CGI-62	NM_016010.1	1005	atgtggcattcgaagaatgattc	355877	782824	see also 6610 line	-
6614	ClA30	NM_016013.1	960	acgattggtcccagttcaact	299273	668592	binding	-
6615	CGI-67	NM_016014.1	515	aaccagtaaaaggcaacagaattg	236084	760138	-	-
6616	CGI-67	NM_016014.1	992	tggactgaagatgaagtcattg	236082	760154	see also 6615 line	-
6617	LUC7L2	NM_016019.1	69	aactgctcaacgaatcaaatcca	355882	752521	-	-
6618	LUC7L2	NM_016019.1	71	ctgctcaacgaatcaaatcagt	355883	752522	see also 6617 line	-
6619	LUC7L2	NM_016019.1	640	ctgacactggagttattgaat	355891	752540	see also 6617 line	-
6620	LUC7L2	NM_016019.1	1105	cggctctatgagatgctgaatgg	355896	752550	see also 6617 line	-
6621	TFB1M	NM_016020.1	506	gtgtttcaactccactgatttc	213910	603931	-	-
6622	UBE2J1	NM_016021.2	432	tagaggataacctttttgaatgg	231200	616649	-	-
6623	UBE2J1	NM_016021.2	705	gagccataggtctctagattac	231212	616660	see also 6622 line	-
6624	UBE2J1	NM_016021.2	1230	ctcttatattccggagaatata	231229	616672	see also 6622 line	-
6625	DREV1	NM_016025.2	379	aaggacacagatcttcttaaac	355939	712001	-	-
6626	RDH11	NM_016026.2	589	aaggatcacttcataaacctgc	227333	614627	-	-

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6627	CGI-83	NM_016027.1	559	aagacctctatgattatgaac	355972	755876	-	-	-
6628	CGI-85	NM_016028.3	886	tgggttgattccgaacttca	356000	754529	-	-	-
6629	CGI-85	NM_016028.3	913	ttgaggagaacatgctacttaga	356002	754530	see also 6628 line	-	-
6630	CGI-85	NM_016028.3	915	gaggagaacatgctacttagaca	356003	754531	see also 6628 line	-	-
6631	CGI-85	NM_016028.3	1047	gtgtcaactggtcgagatagaagc	356009	754534	see also 6628 line	-	-
6632	CGI-90	NM_016033.1	674	acccataagatgctacttcaatt	356046	716677	-	-	-
6633	CGI-90	NM_016033.1	675	ccctaagatgctacttcaattc	356047	716678	see also 6632 line	-	-
6634	CGI-90	NM_016033.1	695	ttcaacttatgggtatttggc	356048	716679	see also 6632 line	-	-
6635	CGI-100	NM_016040.2	602	aagtcagactaagcaaaagtgg	127284	529349	-	protein carrier	-
6636	F-LANa	NM_016041.2	103	ccgcgtgcagttggaattgatc	326451	744259	-	-	-
6637	F-LANa	NM_016041.2	104	cgcctgagctgggaattgatca	328452	744260	see also 6636 line	-	-
6638	CSL4	NM_016046.2	39	cggcgaacgtctgttaacttgg	50148	472722	-	protein binding	-
6639	P14	NM_016047.2	329	gggaatatggactatttcgtca	53153	472591	-	-	-
6640	P14	NM_016047.2	336	atggacctattcgtcaaatcaga	53154	472592	see also 6639 line	-	-
6641	C14orf122	NM_016049.3	465	ctggggcaattgcagaattcttc	277452	666631	-	molecular_function	-
6642	CGI-116	NM_016053.1	150	ctgaccacagggtgccagctatca	356116	721201	-	unknown	-
6643	CGI-116	NM_016053.1	152	gaccaagggtgccagctattcaac	356117	721202	see also 6642 line	-	-
6644	CGI-116	NM_016053.1	159	ttgcagactatcaacagaaaag	356118	721204	see also 6642 line	-	-
6645	MRPL48	NM_016055.3	534	tggggacagattgaattatgg	285856	727733	-	-	-
6646	CGI-125	NM_016060.1	142	ttggaattgtgcaattgtttgac	356135	721189	transcription_regulat	-	-
6647	CGI-125	NM_016060.1	189	tggccaaaggaggttacttcaag	356140	721193	see also 6646 line	-	-
6648	CGI-125	NM_016060.1	190	gcccacaaagggttacttcaaga	356141	721194	see also 6646 line	-	-
6649	CGI-141	NM_016072.2	313	aggaatgatctcgaatttatg	305507	673298	kinase_related	-	-
6650	CGI-141	NM_016072.2	314	ggcatgatcttcgaatttatgg	305508	673299	see also 6649 line	-	-
6651	CGI-141	NM_016072.2	317	atgatcttcgaatttatggatt	305509	673300	see also 6649 line	-	-
6652	C13orf9	NM_016075.1	637	aagatgagaccatcagattttaa	356196	729007	-	-	-
6653	CDK5RAP	NM_016082.3	952	ggctttaccaccaactataaac	356231	529098	kinase_related	-	-
6654	CNR1	NM_016083.3	510	caggcttctactacacttoatog	238961	624016	-	-	alcoholism(アルコール依存症)、Parkinson
6655	CNR1	NM_016083.3	595	cacgtgtccaccgcaaatagatag	238963	624019	see also 6654 line	-	-
6656	CNR1	NM_016083.3	596	acgtgtccaccgcaaatagatag	238964	624020	see also 6654 line	-	-
6657	RBM7	NM_016090.2	625	tcctactactgacagatagacatt	54081	478332	-	RNA binding	-
6658	EIF356IP	NM_016091.1	1193	acctccagctgcgggagaatat	56728	535090	-	-	-
6659	LOC51122	NM_016094.1	216	cagcatagtggaaggattaac	356261	785410	-	-	-
6660	NAT5	NM_016100.2	162	ttgatccacttacagaactta	215173	602219	-	-	-
6661	NAT5	NM_016100.2	163	tggatccacttacagaacttat	215174	602220	see also 6660 line	-	-
6662	NAT5	NM_016100.2	371	tgttaacttatggagtactac	215185	602231	see also 6660 line	-	-
6663	FKBP7	NM_016105.2	337	caccocaaatgggtttgtcttgg	145172	548700	-	-	-
6664	ZFR	NM_016107.3	289	cagtagctgtcacacagttact	55855	476106	-	-	-
6665	ZFR	NM_016107.3	823	ctcagagtgctacttacagacc	55867	476116	see also 6664 line	-	-
6666	ZFR	NM_016107.3	1103	tggaccacagacttataagaac	55873	476123	see also 6664 line	-	-
6667	ZFR	NM_016107.3	1360	ttgttagccaaagctacttctca	55880	476131	see also 6664 line	-	-

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6668	ZFR	NM_016107.3	2679	ctgacatctcccaattattcgaga	55906	476174	see also 6664 line				
6669	PKD2L1	NM_016112.2	933	tcccaactctctactactatga	150726	544387	channel	-			polycystic kidney disease(多発性嚢胞腎)
6670	PKD2L1	NM_016112.2	1925	cactcagttccggataactctcg	150743	544402	see also 6669 line				
6671	ASB3	NM_016115.3	919	atcttggacttgttaataccact	315536	680359	-	-			
6672	NYREN18	NM_016118.3	139	aaacttggaaaacctccatataca	282665	706430	-			molecular_function	
6673	NYREN18	NM_016118.3	1048	gactgttcacataaaaggaaat	282689	706450	see also 6672 line			unknown	
6674	RNF12	NM_016120.2	1188	aagagttcgtctggagaatctc	113260	669264	transcription_regulat	-			
6675	RNF12	NM_016120.2	1419	gaccatgtttaaggcagataatga	113268	669276	see also 6674 line				
6676	58	NM_016122.1	1417	aggatcgtgaattaatagctaaa	356314	740832	-	-			
6677	LOC51136	NM_016125.2	494	ctcagaattccgtactctctcca	356329	740569	-	-			
6678	LOC51136	NM_016125.2	595	ttggaattggctgcttaacaact	356335	740573	see also 6677 line				
6679	MGC8721	NM_016127.3	370	gtctctgaagaccagatgtac	356353	724975	-	-			
6680	COPS4	NM_016129.2	184	gagcggctctcataaagactctgg	356374	703915	-	-			
6681	COPS4	NM_016129.2	438	aggagcaggttgcttcataaga	356379	703926	see also 6680 line				
6682	COPS4	NM_016129.2	440	gagcaggttgcttcataagaaca	356380	703927	see also 6680 line				
6683	COPS4	NM_016129.2	767	gagctctcttaacaagacaatagt	356390	703940	see also 6680 line				
6684	RAB10	NM_016131.2	520	gagtgagactcgttttcaagc	37221	519842	-			protein transporter	
6685	RAB10	NM_016131.2	572	aagacctgcgtctttttcttt	37223	519844	see also 6684 line				
6686	RAB10	NM_016131.2	714	agcgatttcacaccatcacacc	37229	519848	see also 6684 line				
6687	RAB10	NM_016131.2	969	aagcaaatataaacatcgaaaag	37239	519855	see also 6684 line				
6688	MYEF2	NM_016132.2	1292	tagtagatggagcagagattttg	359	485201	transcription_regulat	-			
6689	MYEF2	NM_016132.2	1386	gggtttgacaggagaataaggatc	364	485209	see also 6688 line				
6690	DNCL1	NM_016141.1	205	acggagcagggcagacactttgg	108709	519103	signal_transduction	-			
6691	DNCL1	NM_016141.1	541	agccttggactcgtttggattct	108720	519108	see also 6690 line				
6692	DNCL1	NM_016141.1	816	aagtgtgctgcattagtgtatt	108728	519109	see also 6690 line				
6693	NSFL1C	NM_016143.3	1546	agtcaccaagaccatccaatgc	356448	812920	-	-			
6694	PTD002	NM_016144.2	259	tagaacaggcagtgatcacat	356466	801263	-	-			
6695	PME-1	NM_016147.1	948	tcatacacctggagaattgaac	237150	594505	phosphatase	-			
6696	PIAS1	NM_016166.1	98	tggcggacagtgaggaaactaaag	35067	463579	transcription_regulat	-			
6697	PIAS1	NM_016166.1	99	ggcggacagtgaggaaactaaagc	35068	463580	see also 6696 line			zinc binding	
6698	PIAS1	NM_016166.1	103	gacagtgcggaactaaagcaaat	35069	463581	see also 6696 line				
6699	PIAS1	NM_016166.1	105	cagtcggaactaaagcaaatgg	35070	463582	see also 6696 line				
6700	PIAS1	NM_016166.1	108	tgcggactaaagcaaatggta	35071	463583	see also 6696 line				
6701	PIAS1	NM_016166.1	189	cggcgcgcaaacacgaactctca	35074	463585	see also 6696 line				
6702	PIAS1	NM_016166.1	650	tggatatctctgggaccacaatgt	35089	463591	see also 6696 line				
6703	PIAS1	NM_016166.1	931	tccatggcagtatatttgaat	35097	463607	see also 6696 line				
6704	PIAS1	NM_016166.1	1003	aggatccggatattcttagagc	35098	463610	see also 6696 line				
6705	PIAS1	NM_016166.1	1013	atcatctagagctttaaataa	35100	463612	see also 6696 line				
6706	PIAS1	NM_016166.1	1239	tccatatgaacacaccttattatg	35108	463615	see also 6696 line				

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6707	PIAS1	NM_016166.1	1746	aggagacaatcagcattacaaca	35124	463631	see also 6696 line	receptor activity, channel	store-operated calcium channel	-
6708	TRPC4	NM_016179.1	233	tggtcagttctattacaaga	252050	645438				
6709	TRPC4	NM_016179.1	743	cccagaggtccgttaactgt	252070	645448	see also 6708 line			
6710	TRPC4	NM_016179.1	745	cacgagtcgcgttaactgtgt	252071	645449	see also 6708 line			
6711	TRPC4	NM_016179.1	1104	ggccattagtcacgtcaaaaag	252079	645457	see also 6708 line			
6712	TRPC4	NM_016179.1	1111	aagtaccgtcaaaaagattgtt	252080	645459	see also 6708 line			
6713	TRPC4	NM_016179.1	1287	aagccacttgactgtttcatca	252086	645462	see also 6708 line			
6714	ACTL6	NM_016188.3	314	gtcatgtgcccctcaagaatgg	276358	531595	-			
6715	ACTL6	NM_016188.3	482	atgttcgacagtcacacattcc	276359	531596	see also 6714 line			
6716	ACTL6	NM_016188.3	811	ctggcataactacatgttaatg	276362	531602	see also 6714 line			
6717	TMEFF2	NM_016192.2	1068	gtcagatgtcaagataacacaact	284855	663440	-		pre-mRNA splicing factor	-
6718	LSM8	NM_016200.2	145	aaggttttgaccagaccattaat	46358	749226	-		molecular function unknown	-
6719	PRKAG2	NM_016203.2	883	atgagtcacacaaagtgatga	283148	756144	-			
6720	PRKAG2	NM_016203.2	885	gaggtcacacaaagtgatgaca	283149	756145	see also 6719 line			
6721	PRKAG2	NM_016203.2	888	gtcacacaagtgatgacacatcg	283150	756146	see also 6719 line			
6722	PRKAG2	NM_016203.2	1194	aagcctcttcagatcgtatact	283159	756158	see also 6719 line			
6723	GDF2	NM_016204.1	606	ctgagctccgactctatgtctcc	168575	565523	-		growth factor	-
6724	TRIP4	NM_016213.2	1165	gcctttggaggtctctgtaaatc	112879	638291	transcription_regulator or		transcriptional activator	-
6725	DCTN4	NM_016221.2	941	cagaagtggagaatcatgtcaatt	322468	723791	-			-
6726	DCTN4	NM_016221.2	992	ttcccaaccttcgctacatgaag	322469	723792	see also 6725 line			
6727	DDX41	NM_016222.2	1147	gccacatgccgaagaagattca	50801	483145	apoptosis		RNA binding	-
6728	DDX41	NM_016222.2	1149	caccatccgaagaagatcaga	50802	483146	see also 6727 line			
6729	SNX9	NM_016224.3	1056	gagcgtctctcgtttaagtttgg	252881	652620	-		protein transporter	-
6730	SNX9	NM_016224.3	1839	cacagtaaccagatctatgatta	252899	652641	see also 6729 line			
6731	SNX9	NM_016224.3	1841	cagtaaccggatctatgattaca	252900	652642	see also 6729 line			
6732	SNX9	NM_016224.3	1846	accgatctatgattacaacagt	252901	652643	see also 6729 line			
6733	NLK	NM_016231.1	754	gggtcttcgggaattgaagatg	94811	510342	kinase_related, transcription_regulator or			-
6734	NLK	NM_016231.1	760	tcgggaattgaagatgtgtgt	94812	510343	see also 6733 line			
6735	NLK	NM_016231.1	1084	tagatgaatcccgatcatgact	94819	510355	see also 6733 line			
6736	NLK	NM_016231.1	1156	gccgttattacagcaatgtatt	94820	510357	see also 6733 line			
6737	NLK	NM_016231.1	1157	ccgtcattacagcaatgtctatt	94821	510358	see also 6733 line			
6738	NLK	NM_016231.1	1630	ctgtcgacagagtaaaagaatt	94839	510366	see also 6733 line			
6739	ANAPC5	NM_016237.3	259	tgttcagagggcccagattatata	227586	711897	cell cycle			-
6740	ANAPC5	NM_016237.3	261	ctgcagggcccagattatatact	227587	711898	see also 6739 line			
6741	ANAPC5	NM_016237.3	332	ttcagtcagatcagaatcaaac	227588	711900	see also 6739 line			
6742	ANAPC5	NM_016237.3	990	cactgcgcgttcggctactatca	227599	711919	see also 6739 line			
6743	ANAPC5	NM_016237.3	993	tgcgcgttcggctactatcaaca	227601	711920	see also 6739 line			
6744	ANAPC7	NM_016238.1	377	atggagatcccttcagacaaaga	307029	709322	cell cycle			-



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6745	ANAPC7	NM_016238.1	666	taccatctgttcacatagagaaaa	307038	709328	see also 6744 line			
6746	MYO15A	NM_016239.2	4997	cgccatgcccaggctcttctatg	92663	509351	-		structural molecule	deafness(耳)
6747	MYO15A	NM_016239.2	4998	gccatgcccaggctcttctatgc	92664	509352	see also 6746 line			
6748	SCARA3	NM_016240.2	269	gccgtgccagaagaacactatct	245119	776361	receptor activity	-		
6749	SCARA3	NM_016240.2	273	ctgcagaagaacactatctttgc	245120	776362	see also 6748 line			
6750	SCARA3	NM_016240.2	1478	gagaaatccttcgcaatgtcacc	245134	776384	see also 6748 line			
6751	IMP2	NM_016247.1	3234	aagttcagcctgtgaatgaatt	178141	785061	-			
6752	IMP2	NM_016247.1	3379	atgatggaagtgtgacattatg	178143	785067	see also 6751 line			
6753	NDRG2	NM_016250.1	446	tcctgcagctacctaattttctct	282566	684281	-		molecular_function	unknown
6754	NDRG2	NM_016250.1	449	tgcagctacctaattttctctaca	282567	684283	see also 6753 line			
6755	BIRC6	NM_016252.1	610	gccagtgccattgtaaatgaact	232589	615585	apoptosis		ubiquitin	conjugating
6756	BIRC6	NM_016252.1	1418	tggagtgagcctctgataaaca	232609	615606	see also 6755 line			
6757	BIRC6	NM_016252.1	1619	tagctgagagttttaaacatat	232616	615615	see also 6755 line			
6758	BIRC6	NM_016252.1	1622	ctggaggttttaaacatataaa	232617	615616	see also 6755 line			
6759	BIRC6	NM_016252.1	1649	ctgtacctaccaccattagtagt	232618	615619	see also 6755 line			
6760	BIRC6	NM_016252.1	1654	acctaccaccattagtagtaattc	232619	615620	see also 6755 line			
6761	BIRC6	NM_016252.1	2282	ctgtagtgaaatggtgcaaatatt	232640	615637	see also 6755 line			
6762	BIRC6	NM_016252.1	3530	gccccaaactgttaaaaggtagt	232669	615676	see also 6755 line			
6763	BIRC6	NM_016252.1	3531	ccccaaactgttaaaaggtagtg	232670	615677	see also 6755 line			
6764	BIRC6	NM_016252.1	4136	ttctagccttgctgattagtaatt	232699	615698	see also 6755 line			
6765	BIRC6	NM_016252.1	5763	tgttaacaatgcacagctactttt	232738	615744	see also 6755 line			
6766	BIRC6	NM_016252.1	6983	aggtcttgacagcagctgcaaat	232783	615784	see also 6755 line			
6767	BIRC6	NM_016252.1	8660	gagatcaactcatgtttgatttg	232832	615828	see also 6755 line			
6768	BIRC6	NM_016252.1	8925	caagtccatggcaatgataaattg	232836	615840	see also 6755 line			
6769	BIRC6	NM_016252.1	9132	tgtacttgccagttatctagc	232845	615849	see also 6755 line			
6770	BIRC6	NM_016252.1	9274	aacactgcaagaagatggtatc	232852	615853	see also 6755 line			
6771	BIRC6	NM_016252.1	9900	tggatggttacgggttattacatc	232870	615873	see also 6755 line			
6772	BIRC6	NM_016252.1	10647	gtccatgacagatgtagcagaaa	232897	615911	see also 6755 line			
6773	BIRC6	NM_016252.1	12145	atgggtggactggctcttattgc	232943	615953	see also 6755 line			
6774	BIRC6	NM_016252.1	12830	atgtggaacaagccttaactaag	232967	615967	see also 6755 line			
6775	ZNFN1A2	NM_016260.1	404	agcctagaagaacccctaattga	45966	702986	transcription_regulat	translation	regulator	-
6776	ZNFN1A2	NM_016260.1	484	ccggcttccaatggttaactga	45969	702987	see also 6775 line			
6777	ZNFN1A2	NM_016260.1	486	ggcttcgaatggttaaacatgaaa	45970	702988	see also 6775 line			
6778	ZNFN1A2	NM_016260.1	1228	agcttattcaggctctatcatc	45988	703001	see also 6775 line			
6779	AK3L1	NM_016282.2	486	gtgccccttgagggtcattaaaca	71911	493631	kinase_related		adenylate kinase	-
6780	KIAA1007	NM_016284.2	4147	aaccttcattagacatcaatga	356785	768407	-			-
6781	KIAA1007	NM_016284.2	4353	cagctaacacgacatcaatgtct	356791	768408	see also 6780 line			
6782	KIAA1007	NM_016284.2	4829	gccctgagatggacaagagagatta	356806	768425	see also 6780 line			
6783	KIAA1007	NM_016284.2	5026	ttcttacctacaaatgacttaag	356811	768431	see also 6780 line			
6784	KIAA1007	NM_016284.2	5410	atcacaaagggtccatgaatg	356824	768453	see also 6780 line			
6785	KIAA1007	NM_016284.2	6604	gagttccttggtattaccatta	356864	768490	see also 6780 line			

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6786	HP1-BP74	NM_016287.1	110	aaggcactcccacttagtagg	28641	460375	-	-	-
6787	HP1-BP74	NM_016287.1	825	tggatcaagaaccacaagtaaaa	28657	460385	see also 6786 line	-	-
6788	HP1-BP74	NM_016287.1	1153	taccactctctgaagaagtatg	28664	460393	see also 6786 line	-	-
6789	MO25	NM_016289.2	660	gagaactctctctgttgataca	356900	748136	-	-	-
6790	HSP70-4	NM_016299.1	403	aagattgttcagagactgatttt	85083	503743	-	-	-
6791	HSP70-4	NM_016299.1	1034	tacagcagatgatatacaacagg	85107	503762	see also 6790 line	-	-
6792	ARPP-21	NM_016300.3	1126	atcttgaagcagagataacttag	276934	485486	-	molecular_function	unknown
6793	ARPP-21	NM_016300.3	1136	gagataactcttagattgataaa	276935	485488	see also 6792 line	-	-
6794	ARPP-21	NM_016300.3	1191	tagagatgaagcagcgaagtaaat	276937	485491	see also 6792 line	-	-
6795	ARPP-21	NM_016300.3	1198	gacagacgaagtaaatcaattga	276938	485493	see also 6792 line	-	-
6796	ARPP-21	NM_016300.3	1200	cagacgaagtaaatcaattgaag	276939	485494	see also 6792 line	-	-
6797	ARPP-21	NM_016300.3	1335	atgcaatgagacctaagaataa	276942	485497	see also 6792 line	-	-
6798	LOC51185	NM_016302.2	529	aagaacacagtcagatggaatcc	191190	584509	-	-	-
6799	LOC51185	NM_016302.2	877	tgtcttcctattgatgatgat	191201	584522	see also 6798 line	-	-
6800	LOC51186	NM_016303.1	552	accatccttaccctatttaattg	356931	702947	-	-	-
6801	DNAJB11	NM_016306.3	817	atggagatccctttattggaga	299397	534633	-	-	-
6802	DNAJB11	NM_016306.3	876	acgggtccgaatcaaatgtgtca	299398	534635	see also 6801 line	-	chaperone
6803	DNAJB11	NM_016306.3	1102	aagggtcctttgataatcaattt	299405	534641	see also 6801 line	-	-
6804	CED-6	NM_016315.1	1198	aacrttttgacccatttaactgt	226447	729694	apoptosis	-	-
6805	REV1L	NM_016316.1	359	tagggagtgccatctatgtgta	17558	598218	-	-	-
6806	REV1L	NM_016316.1	362	tggagtgccatctatgttaattg	17559	598220	see also 6805 line	-	-
6807	REV1L	NM_016316.1	1648	cagcagatataccagatcattca	17590	598253	see also 6805 line	-	-
6808	REV1L	NM_016316.1	1766	tggcatlaagaacggaattgttt	17594	598256	see also 6805 line	-	-
6809	REV1L	NM_016316.1	2619	atgtttcatcacatgaactaaa	17624	598287	see also 6805 line	-	-
6810	RAB14	NM_016322.2	294	ggctgattgtctccacacattg	109910	519898	-	protein transporter	-
6811	SFMBT1	NM_016329.1	790	gaggaatccttagatctcattg	356961	708227	-	-	-
6812	SFMBT1	NM_016329.1	2076	gggctactgttgagatagtgaaa	357009	708289	see also 6811 line	-	-
6813	SFMBT1	NM_016329.1	2868	aacttgccatcacatagagagg	357033	708311	see also 6811 line	-	-
6814	ANC 2H01	NM_016331.1	1807	ttcagctgactgcctcataaat	357077	753152	transcription_regulat	-	-
6815	SRRM2	NM_016333.2	4549	gggtctctccaggaacttagaga	357164	786810	or	-	-
6816	IP011	NM_016338.3	1086	aagttgtgaaggcgttacattt	269165	651164	-	-	-
6817	IP011	NM_016338.3	1161	atgcttataagccatcccaaaaat	269171	651171	see also 6816 line	-	-
6818	IP011	NM_016338.3	1162	tgccttataagccatcccaaaaat	269172	651172	see also 6816 line	-	-
6819	IP011	NM_016338.3	1206	ctctgaagccatcaagattaaag	269173	651173	see also 6816 line	-	-
6820	IP011	NM_016338.3	1226	aagatggcattcttcacatctcc	269174	651174	see also 6816 line	-	-
6821	IP011	NM_016338.3	1270	aagattagtctctcatatttcc	269177	651179	see also 6816 line	-	-
6822	IP011	NM_016338.3	1727	atctgaactgtcttcaagatca	269189	651200	see also 6816 line	-	-
6823	PDZGEF2	NM_016340.1	372	aagacagcctatagagatata	296362	664518	signal_transduction	-	-
6824	PDZGEF2	NM_016340.1	488	tgcctctctgcagtttttgtaag	296365	664524	see also 6823 line	-	-
6825	PLCE1	NM_016341.2	2645	agccgagtgccagtttataattgg	198498	590693	kinase_related,	-	-
							signal_transduction	-	-
							, gpcr	-	-

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6826	PLCE1	NM_016341.2	3891	ttgagctgtcaaatcatcagct	198525	590714	see also 6825 line
6827	PLCE1	NM_016341.2	4665	ctgacctgccaatcatcatcgc	198553	590736	see also 6825 line
6828	PLCE1	NM_016341.2	5327	aagtcatttttggcaaatcc	198565	590749	see also 6825 line
6829	NIN	NM_016350.3	522	acctcttggcagggtacatttt	148991	550533	-
6830	NIN	NM_016350.3	545	gaccaatttaagaagacattaat	148993	550535	see also 6829 line
6831	NIN	NM_016350.3	630	aagtcagccaatataatgtaga	148996	550538	see also 6829 line
6832	CPA4	NM_016352.1	671	gtggccaactctgtgggatagt	185632	579855	carboxypeptidase
6833	ZDHHC2	NM_016353.2	631	ctcgtctgtataaatgtatttt	328097	693641	-
6834	ZDHHC2	NM_016353.2	632	tcctctgtgataaatgtatttt	328098	693642	see also 6833 line
6835	ZDHHC2	NM_016353.2	814	tactcaagccaagtccatatta	328104	693651	see also 6833 line
6836	ZDHHC2	NM_016353.2	819	aagccaagtcccatatattttt	328105	693652	see also 6833 line
6837	ZDHHC2	NM_016353.2	824	aagtcocatattatgtttttatt	328108	693653	see also 6833 line
6838	DDX47	NM_016355.2	775	aggataacctaccctgggtattt	59336	483287	-
6839	DDX47	NM_016355.2	934	taggatacccttaataagtttaag	59345	483293	see also 6838 line
6840	DCDC2	NM_016356.1	797	gtggatcatgtactacaatagg	315093	680872	-
6841	EPLIN	NM_016357.1	1313	ggccaaccagcagggtttcaca	322513	686947	-
6842	RAB9B	NM_016370.1	406	gggtagaggttcttaaatcgaga	110413	518433	signal transduction
6843	RAB9B	NM_016370.1	651	gggtaacaaggtagacaagaagg	110418	518440	see also 6842 line
6844	RBP1L1	NM_016374.4	2271	tccttacttggtgcattactgc	18925	810107	-
6845	RBP1L1	NM_016374.4	2290	ctgcggatggaatggagatacgc	18927	810108	see also 6844 line
6846	CD244	NM_016382.1	855	ttgggtatcatgtgattcttaag	129819	634374	receptor activity
6847	TH1L	NM_016397.2	1435	ctgcagctgctgttaagctttt	357357	710660	-
6848	RNF141	NM_016422.3	388	cgggtggtctgtaccagaattaa	357421	466360	-
6849	RNF141	NM_016422.3	389	gggtggtctgtaccagaattaa	357422	466361	see also 6848 line
6850	LUC7A	NM_016424.2	239	gggacagcagcagcgtttgaaa	301880	723825	-
6851	LUC7A	NM_016424.2	242	accaagagagcgtttgaaatat	301881	723827	see also 6850 line
6852	LUC7A	NM_016424.2	244	cacgagagcgtttgtaaatatta	301882	723828	see also 6850 line
6853	LUC7A	NM_016424.2	245	acgagagcgtttgtaaatattt	301883	723829	see also 6850 line
6854	LUC7A	NM_016424.2	282	tcctgcggaattgttcacaaata	301884	723832	see also 6850 line
6855	LUC7A	NM_016424.2	805	atgggctatgccaaattaaagc	301902	723851	see also 6850 line
6856	DSCR5	NM_016430.2	113	ccgtgcattgcccagaagaagc	210208	708650	-
6857	DSCR5	NM_016430.2	122	ttgccagaagaagcggattatgg	210209	708651	see also 6856 line
6858	GLTP	NM_016433.2	242	ctcccatcaaggcagacataagc	305706	709349	-
6859	ARTS-1	NM_016442.2	906	atgctgtgccagacaagataaat	156065	558803	zinc binding
6860	PLEK2	NM_016445.1	230	tgcacctgcctggaggtgaaaa	309759	681446	-
6861	RAMP	NM_016448.1	947	ctggctctacttatttgcataat	357528	740492	-
6862	COPB	NM_016451.3	998	aaggtctgtcatcgaatcatcgc	268843	650897	protein transporter
6863	COPB	NM_016451.3	2105	aaggaagccaattactatgtga	268875	650926	see also 6862 line
6864	COPB	NM_016451.3	2825	cagatgtgggcccgaatttgaatg	268895	650947	see also 6862 line
6865	LOC51234	NM_016454.2	353	ctccatcttccctactatgatgg	357567	725721	-
6866	TMEM9	NM_016456.2	190	ctggaagatatccgggtgcaaatgc	284892	673519	-
6867	TMEM9	NM_016456.2	193	aagatatccgggtgcaaatgcac	284893	673520	see also 6866 line
6868	C20orf111	NM_016470.6	325	acgggtctcaaggaagactctca	357625	717937	-
6869	C20orf111	NM_016470.6	602	aaggtctccatcagagagtgaga	357629	717940	see also 6868 line

Alzheimer disease(アルツハイマー病)

6870	LOC51244	NM_016474.3	625	ctggagatgataaaattctca	357647	778103	-	-	-
6871	LOC51244	NM_016474.3	828	tgccttggccgagacaaagagt	357650	778105	see also 6870 line	-	-
6872	C14orf100	NM_016475.2	302	ttggttcttcatgtagtgact	357665	714881	-	-	-
6873	PAIP2	NM_016480.2	176	tagcccaagcatcatcaatgaag	357728	724951	-	-	-
6874	PAIP2	NM_016480.2	201	gtgattattaacggtcattctca	357730	724954	see also 6873 line	-	-
6875	LOC51248	NM_016484.3	340	gagctcagttggagatttaacatc	316691	679777	-	-	-
6876	LOC51248	NM_016484.3	341	agctcagttggagatttaacatcc	316692	679778	see also 6875 line	-	-
6877	LOC51248	NM_016484.3	465	gtgaatgatgtgagatttcaaga	316693	679781	see also 6875 line	-	-
6878	LOC51248	NM_016484.3	547	tgccttcttccctacaattat	316694	679782	see also 6875 line	-	-
6879	C6orf55	NM_016485.3	335	ctggacgatttcacaaaacatg	357787	716258	-	-	-
6880	C6orf55	NM_016485.3	336	tggacgatttcacaaaacatga	357788	716259	see also 6879 line	-	-
6881	KBTD4	NM_016506.3	935	aagatgactccatcagtgtaagt	132135	720643	-	-	-
6882	KBTD4	NM_016506.3	1322	tggacttctttaccacaaacttc	132145	720656	see also 6881 line	-	-
6883	CRK7	NM_016507.1	1954	gacatggatagtcacaaagaac	77529	488349	kinase_related	protein serine/threonine kinase	-
6884	CRK7	NM_016507.1	2666	ttagacttgcctggctctataac	77549	488362	see also 6883 line	-	-
6885	CRK7	NM_016507.1	2667	tggactgtctcgcctctataact	77550	488363	see also 6883 line	-	-
6886	CRK7	NM_016507.1	2669	gactgtctcgcctctataactt	77551	488364	see also 6883 line	-	-
6887	CRK7	NM_016507.1	2700	tcgcccttacacaaaacagtc	77554	488365	see also 6883 line	-	-
6888	VPS54	NM_016516.1	175	atgttcccacatctctagtaca	357906	752784	-	-	-
6889	VPS54	NM_016516.1	496	tggagcaagtcacctagattttt	357918	752796	see also 6888 line	-	-
6890	VPS54	NM_016516.1	499	agcaagtcacctagatttttatg	357919	752797	see also 6888 line	-	-
6891	VPS54	NM_016516.1	687	cagatctctcagtttcagaagc	357924	752803	see also 6888 line	-	-
6892	VPS54	NM_016516.1	780	atgcttcagataaaattgcaca	357926	752807	see also 6888 line	-	-
6893	VPS54	NM_016516.1	1849	gccatgctcagctgtcgaattt	357946	752841	see also 6888 line	-	-
6894	VPS54	NM_016516.1	2352	aagtacttcaattcaagaagtg	357964	752854	see also 6888 line	-	-
6895	VPS54	NM_016516.1	2363	tccaagaagttgccagtagttc	357965	752855	see also 6888 line	-	-
6896	VPS54	NM_016516.1	2594	agctaagctgtgagcgataatgg	357979	752864	see also 6888 line	-	-
6897	VPS54	NM_016516.1	2598	aagcttgcgcgataatggatag	357980	752865	see also 6888 line	-	-
6898	VPS54	NM_016516.1	2599	agcttgcgcgataatggatagc	357981	752866	see also 6888 line	-	-
6899	PIPOX	NM_016518.1	1043	caccacaaagatgacacattgt	225823	612704	-	sarcosine oxidase	-
6900	UBAP1	NM_016525.3	924	aaccacatggccttataacccta	358033	713281	-	-	-
6901	UBAP1	NM_016525.3	925	accacatggccttataaccctac	358034	713282	see also 6900 line	-	-
6902	UBAP1	NM_016525.3	1497	agcagattctcgcactatctctt	358043	713298	see also 6900 line	-	-
6903	UBAP1	NM_016525.3	1499	cagattctgcactatctctttgc	358044	713299	see also 6900 line	-	-
6904	ATP8A2	NM_016529.3	830	gcctctcaagagatcaaatgttg	73723	495296	-	plasma membrane cation-transporting ATPase	-
6905	ATP8A2	NM_016529.3	2017	acgccatgcacaggtttctctac	73748	495341	see also 6904 line	-	-
6906	ATP8A2	NM_016529.3	2018	cgccatgcacaggtttctctact	73749	495342	see also 6904 line	-	-
6907	KLF3	NM_016531.2	705	acctgtaattgaatcaatatgaga	5961	461016	transcription_regulator	translation regulator	-
6908	MST4	NM_016542.2	279	cagaagaactgttcacaaaatta	92044	488597	kinase_related	-	-

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6909	MST4	NM_016542.2	939	ttggagacttactaagctttt	92058	488612	see also 6908 line		
6910	LOC51277	NM_016544.1	514	agcaaaagggttctgtactttga	109506	519088	signal transduction	-	-
6911	LOC51277	NM_016544.1	518	aagggttctgtactttgaaact	109507	519089	see also 6910 line		
6912	CTRL	NM_016546.1	1255	agggttttctgacaatatgttc	181657	805498	-	-	-
6913	GOLPH2	NM_016548.2	215	acgggctgcacacatgaagctg	323550	728900	-	-	-
6914	BFAF	NM_016561.1	779	gagtaaatggaagggttccttta	289781	720568	apoptosis	-	-
6915	TLR7	NM_016562.2	1783	tccaacaacccggctgatttact	246947	528144	receptor activity	transmembrane	-
6916	TLR7	NM_016562.2	2180	tggccaaaatggctcaaatct	246956	528159	see also 6915 line	receptor	-
6917	PTX1	NM_016570.1	282	aagttagacaaggattttctagc	358160	722046	-	-	-
6918	PTX1	NM_016570.1	1069	tccaacaacagcgatgttaacatg	358182	722079	see also 6917 line	-	-
6919	GLUL1	NM_016571.1	856	tggcattagctcagctgataatg	232272	617232	-	-	-
6920	GMPR2	NM_016576.2	478	atcattgtgccaatatggatc	223213	610308	-	-	-
6921	RAB6B	NM_016577.1	729	ctgataagaggcagataaccatc	110379	784546	signal transduction	protein transporter	-
6922	RAB6B	NM_016577.1	774	aagaactgagcgtcatgttctt	110380	784547	see also 6921 line	-	-
6923	PCDH12	NM_016580.2	1770	ggccctgatgagaccacaacatgc	149476	551021	-	calcium ion binding	-
6924	PCDH12	NM_016580.2	4141	aaccaaacacccaggagaataag	149511	551066	see also 6923 line	-	-
6925	PCDH12	NM_016580.2	4142	accaaaccacccaggagaataag	149512	551067	see also 6923 line	-	-
6926	MBIP	NM_016586.1	205	gtgtgaaattacaaatcgattg	294176	756484	-	-	-
6927	MBIP	NM_016586.1	535	gacagacgaatatctgcatttat	294184	756494	see also 6926 line	-	-
6928	MBIP	NM_016586.1	696	tctagagttgtaatacatag	294189	756502	see also 6926 line	-	-
6929	NRN1	NM_016588.2	661	aagttgaacggcagatatatttc	358234	769877	-	-	-
6930	NRN1	NM_016588.2	664	tgaacagcagatatatttcoact	358235	769878	see also 6929 line	-	-
6931	NRN1	NM_016588.2	846	gtgcacatactggagagatttcc	358236	769882	see also 6929 line	-	-
6932	NRN1	NM_016588.2	898	tgccaggaaggggcgaagagatat	358238	769883	see also 6929 line	-	-
6933	NRN1	NM_016588.2	899	gccaaggaaggggcgaagagatat	358239	769884	see also 6929 line	-	-
6934	NRN1	NM_016588.2	958	atccaaggcagcttattcgaact	358240	769886	see also 6929 line	-	-
6935	PART1	NM_016590.2	69	aactcaattacgactacatatgc	282921	560028	-	molecular function unknown	-
6936	CYP39A1	NM_016593.3	1223	ctcctgtgtctattactagaaaa	221051	608144	-	human cytochromes P450	Alzheimer disease(アルツハイマー病)
6937	ZDHHC3	NM_016598.1	439	tagcatatcaacagggaatttgt	323573	671033	-	-	-
6938	ZDHHC3	NM_016598.1	1171	ggcagaccctaccagatgtgtgg	323580	671044	see also 6937 line	-	-
6939	MYO22	NM_016599.2	306	aagatgctcaaaagaagatctga	125629	686979	phosphatase	-	-
6940	C5orf5	NM_016603.1	465	ctcctccctctcttgatgaact	297702	665242	-	-	-
6941	C5orf5	NM_016603.1	578	tccgccaggttgaggactatt	297707	665246	see also 6940 line	-	-
6942	C5orf5	NM_016603.1	579	ccgccaggttgaggactattg	297708	665247	see also 6940 line	-	-
6943	C5orf5	NM_016603.1	580	ggccacgttgaggactattga	297709	665248	see also 6940 line	-	-
6944	C5orf5	NM_016603.1	925	ggcaatgtagcatcacatcatga	297717	665260	see also 6940 line	-	-
6945	C5orf5	NM_016603.1	1744	ctggattcttagtagcaagatag	297743	665285	see also 6940 line	-	-
6946	C5orf5	NM_016603.1	2758	atgttacagccaatcatagaagg	297771	665317	see also 6940 line	-	-
6947	C5orf7	NM_016604.2	4636	agccaatgtgtctcaactcaag	358339	739507	-	-	-
6948	C5orf7	NM_016604.2	4637	gccaatgtgtctcaactcaag	358340	739508	see also 6947 line	-	-
6949	LOC51308	NM_016606.1	310	cccgagacaagagctatgagacc	358361	754464	-	-	-

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6950	SLC22A17	NM_016609.2	445	tcctcaactaccgcaacatctgg	274354	514692	-	-	-
6951	TTRAP	NM_016614.2	963	ttcgttttgatcgaatatttttc	113378	638449	-	receptor_activity, transcription_regulat or、	-
6952	SLC6A13	NM_016615.2	1603	cgctgacctacacaagaagtac	255969	639967	-	neurotransmitters odium symporter	-
6953	BHC80	NM_016621.2	1498	gtctctaggttggttaacacatg	22727	456359	or	transcription_regulat	-
6954	BHC80	NM_016621.2	2248	gagctgcacagcaactgaacc	22734	456368	see also 6953 line	-	-
6955	BM-009	NM_016623.2	573	tccactagtaggcaaataaaga	358534	754265	-	-	-
6956	BM-009	NM_016623.2	575	cactagtaggcaaataaagaaa	358535	754266	see also 6955 line	-	-
6957	BM-009	NM_016623.2	1084	aggtaatggtgggtgctaat	358547	754282	see also 6955 line	-	-
6958	BM-009	NM_016623.2	1085	gggtaatggtgggtgctaat	358548	754283	see also 6955 line	-	-
6959	BM-009	NM_016623.2	1091	tggtgggtgctaatctctat	358549	754284	see also 6955 line	-	-
6960	BM-009	NM_016623.2	1093	gtgggtgctaatctctatga	358550	754285	see also 6955 line	-	-
6961	MGC12197	NM_016625.2	981	tgctatcaagtaaccaagatgaca	358594	573379	-	-	-
6962	LOC51321	NM_016627.1	869	accatgagatcggaacacatt	157365	559951	-	-	-
6963	C21orf66	NM_016631.2	2721	ttgcaagtgaccacaattgtaaa	23481	452987	or	transcription_regulat	-
6964	MRPS30	NM_016640.2	1087	atgttactgacctttgtctcc	227161	658824	apoptosis	DNA binding	-
6965	MIR16	NM_016641.3	495	atgcaacgatacaacagtagatag	198925	708750	-	-	-
6966	MIR16	NM_016641.3	496	tgcaacgatacaacagtagatagg	198926	708751	see also 6965 line	-	-
6967	ZAK	NM_016653.1	699	eggttgggaagattacaagtag	107786	495484	kinase related, cell_cycle,	-	-
6968	ZAK	NM_016653.1	1548	gacaaagccaccatttgaatgg	107815	495509	signal_transduction	-	-
6969	ADD3	NM_016824.1	146	aggaacatgtctctgatctacg	121181	526499	see also 6967 line	-	Alzheimer disease(アルツハイマー病)
6970	PER3	NM_016831.1	601	aaggttagtgcaacatttgaac	254801	639406	signal_transduction	-	-
6971	PER3	NM_016831.1	1130	atggtgccatacaccaaaaaagt	254816	639425	transcription_regulat see also 6970 line	signal transducer	-
6972	POLA	NM_016937.1	926	gtctctgttgggacattgatca	35644	463846	-	Nuclear factor 1 C-type-7	-
6973	POLA	NM_016937.1	928	ctcttgggacattgataaag	35645	463847	see also 6972 line	-	-
6974	POLA	NM_016937.1	1498	aggacatttggcttgaagtaa	35661	463865	see also 6972 line	-	-
6975	POLA	NM_016937.1	2960	ggagtttggatgcatacagaaga	35690	463907	see also 6972 line	-	-
6976	POLA	NM_016937.1	4037	tactatgagctggtgataag	35720	463952	see also 6972 line	-	-
6977	C21orf6	NM_016940.1	248	gagaatgagctcattgataga	192177	585901	phosphatase	molecular_function unknown	-
6978	PARD6A	NM_016948.1	124	tcgtcgaggtagaagacaaattt	308355	675122	cell cycle	-	-
6979	SPOCK3	NM_016950.1	904	tacaaactgaactgctattgg	153179	663346	-	-	-
6980	TBX22	NM_016954.2	467	tggaattccaacgctctataggac	12772	449177	-	-	-
6981	SLA/LP	NM_016955.1	603	gagcttgacacaaaatttatgg	49238	774550	-	transcription factor	-
6982	SLA/LP	NM_016955.1	626	ttccagtagtggtgctataatt	49239	774551	see also 6981 line	-	-

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6983	HOXC13	NM_017410.2	145	ctggccgagagagccttatgtacg	5177	444792	transcription_regulat or	RNA polymerase II transcription factor	-
6984	FZD3	NM_017412.2	1257	atcgagtagctgccaatgcattcc	242503	630562	receptor_activity, gpcr,	frizzled receptor	schizophrenia(精神分裂病)
6985	FZD3	NM_017412.2	1653	ctggcattatccctaaacaga	242515	630585	signal transduction		
6986	FZD3	NM_017412.2	1988	tgcttgaatggccagttttt	242528	630599	see also 6984 line		
6987	IL1RAPL2	NM_017416.1	1317	gtggagaagcataataataacaga	123290	527771	receptor activity	-	-
6988	IL1RAPL2	NM_017416.1	1622	aagaactggcaggtcacattaga	123297	527777	see also 6987 line		
6989	IL1RAPL2	NM_017416.1	2170	atcgtctaactccagaactatat	123311	527797	see also 6987 line		
6990	IL1RAPL2	NM_017416.1	2173	gtgctaactccagactatattct	123312	527798	see also 6987 line		
6991	IL1RAPL2	NM_017416.1	2194	ctcagacggaggtggagattttt	123313	527799	see also 6987 line		
6992	IL1RAPL2	NM_017416.1	2200	cgggagtgaggtattttcgaaact	123316	527800	see also 6987 line		
6993	SIX4	NM_017420.1	604	ggcggaggagacgggtattgttt	11292	448442	transcription_regulat or	transcription factor	-
6994	SIX4	NM_017420.1	608	agggaacgggtattgtttcaag	11294	448443	see also 6993 line		
6995	SIX4	NM_017420.1	1421	tccttaatgggagcattggattc	11317	448457	see also 6993 line		
6996	SIX4	NM_017420.1	1899	atctgtcagcaactaactatg	11332	448471	see also 6993 line		
6997	COQ3	NM_017421.2	800	tcctatgccttgggaattgtttt	214016	604452		hexaprenyldihydrox ybenzoate	-
6998	GALNT7	NM_017423.1	268	aagtggaacttaggtctataga	211156	599865		methyltransferase	-
6999	GALNT7	NM_017423.1	270	gtggacttaggtctattagaag	211157	599866	see also 6998 line		
7000	GALNT7	NM_017423.1	271	tggacttaggtctattagaaga	211158	599867	see also 6998 line		
7001	SPA17	NM_017425.2	154	aacacccactaccgaattccaca	298645	666176	kinase related, signal transduction	cAMP-dependent protein kinase, regulator	-
7002	SPA17	NM_017425.2	223	gagcaaccggacaataataccagc	298649	666180	see also 7001 line		
7003	BCD01	NM_017429.1	512	tcggagccctgcgaataacatat	224474	711804	-	-	-
7004	MYO3A	NM_017433.3	1518	ttggaagagctctaataacagaacc	92982	446193	kinase_related	-	-
7005	MYO3A	NM_017433.3	2130	tggtaactagagagagaacaatt	92999	446214	see also 7004 line		
7006	MYO3A	NM_017433.3	2358	agctgtcattacaacttgcatt	93009	446220	see also 7004 line		
7007	MYO3A	NM_017433.3	2451	tggatgtaggtattgaatat	93013	446224	see also 7004 line		
7008	MYO3A	NM_017433.3	3525	atcaggaattcgaactacaagaaa	93042	446257	see also 7004 line		
7009	MYO3A	NM_017433.3	3527	cagggaattcgaactacaagaaaa	93043	446258	see also 7004 line		
7010	MYO3A	NM_017433.3	3528	aggaattcgaactacaagaaaaac	93044	446259	see also 7004 line		
7011	CPSF2	NM_017437.1	682	ctgcacgtggtatataatagagg	44980	473326	-	-	-
7012	MDM1	NM_017440.2	638	atgcttgagaaattctgaatat	324570	701589	-	-	-
7013	MRPL39	NM_017446.2	242	tactgtcttcgtgatgaataaaa	282245	658565	-	-	-
7014	MRPL39	NM_017446.2	971	atctcggaaaattgtaactgaag	282270	658591	see also 7013 line		
7015	MARK2	NM_017490.1	1944	ccccccacggagagtaactgtga	90260	507963	kinase_related	-	-
7016	HSGP25L2 G	NM_017510.3	194	accggacgcagctgtatgacaag	127301	529333	-	-	-
7017	DNAH3	NM_017539.1	9592	cccttggtctccaaagatacaact	79061	814679	-	-	-

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7018	DNAH3	NM_017539.1	10839	cagctatccatcagagaagtttc	79080	814711	see also 7017 line
7019	DNAH3	NM_017539.1	11628	aaggcaggagctcagattca	79095	814722	see also 7017 line
7020	GALNT10	NM_017540.3	896	agggaacacagctgtggaatac	358991	599750	-
7021	GALNT10	NM_017540.3	897	agggaacacagctgtggaatacc	358992	599751	see also 7020 line
7022	POGK	NM_017542.3	1348	aagttacacacgctacatctttt	35541	463814	apoptosis
7023	POGK	NM_017542.3	1352	taccaccgtacatttgagg	35542	463815	see also 7022 line
7024	HAO1	NM_017545.2	784	gggactcttggtcgtgaatcagg	221002	608051	glycolate oxidase
7025	C40	NM_017546.3	1171	cccttagctagctatagaaatgt	277894	732130	-
7026	C40	NM_017546.3	1275	aagttgaatacagtaactaca	277896	732134	see also 7025 line
7027	C40	NM_017546.3	1424	ttgatcgttaacaaaattattaa	277905	732143	see also 7025 line
7028	H17	NM_017547.2	1324	cgctagtgtcaacatgtacttt	226932	613537	-
7029	H17	NM_017547.2	1453	tcctttaccgccttttacttg	226934	613541	see also 7028 line
7030	UCG1	NM_017549.1	900	ctgtccaggaaacctttaccata	154236	745852	calcium ion binding
7031	UCG1	NM_017549.1	954	ttgacatccagctgtggtattaaa	154239	745856	see also 7030 line
7032	DKFZp434						
7033	LO850	NM_017558.1	2884	tagcttgatataccactattacc	359066	781040	-
7034	IL17RD	NM_017563.1	639	agcctgtgacctgtgtttacagc	246459	633756	receptor activity
7035	IL17RD	NM_017563.1	1327	cacgagtcocagttcatctgt	246476	633766	see also 7033 line
7036	NAGK	NM_017567.1	627	ctgtataggagactgtgataaatg	93824	510032	kinase_related
7037	P8IP	NM_017569.2	971	atgaacactcgcacatgaacag	359145	709899	-
7038	UBE2Q	NM_017582.5	772	ggccatctagagaaaaattaaaa	231266	620296	-
7039	UBE2Q	NM_017582.5	800	cagaggaacagattacttaattgg	231267	620298	see also 7037 line
7040	UBE2Q	NM_017582.5	881	taccgatcacagagatttcaaaagg	231269	620300	see also 7037 line
7041	UBE2Q	NM_017582.5	892	gagtttcaaaaggcggaaactatg	231270	620301	see also 7037 line
7042	UBE2Q	NM_017582.5	913	tgcagtgaaactgtgaatgaca	231271	620302	see also 7037 line
7043	UBE2Q	NM_017582.5	915	cagtcgaactcgtgaatgacagt	231272	620303	see also 7037 line
7044	TRIM44	NM_017583.3	1254	gagcacagcagtcctacaagtcc	231279	620309	see also 7037 line
7045	BMP2K	NM_017593.3	398	aacttgataccctctaatgaatca	160593	710183	-
7046	DKFZp761						
7047	DKFZp761						
7048	DKFZp761						
7049	DKFZp434						
7050	E2220	NM_017612.2	322	gcgcgagaatcaagaacttaaa	359529	480066	-
7051	DKFZp434						
7052	E2220	NM_017612.2	324	gccggagaatcaagaacttaaacg	359530	480068	see also 7049 line
7053	DKFZp434						
7054	E2220	NM_017612.2	634	ttgtagggaagtgctctgtatttt	359545	480088	see also 7049 line
7055	DKFZp434						
7056	E2220	NM_017612.2	656	tactaatttttgcttgataaat	359546	480089	see also 7049 line

Alzheimer disease(アルツハイマー病)



7053	DKFZp434	NM_017612.2	800	aagccaaagcctcactgtttca	359550	480094	see also 7049 line
7054	E2220	NM_017613.2	525	tacctgtgactggagtataaa	279475	712073	-
7055	DONSON	NM_017613.2	526	acctgtgactggagtataaaa	279476	712074	see also 7054 line
7056	DONSON	NM_017613.2	528	ctgtggactggagtataaaacg	279477	712075	see also 7054 line
7057	DONSON	NM_017613.2	629	cagcattgtaggcaacagaagt	279480	712076	see also 7054 line
7058	EIF2C4	NM_017629.2	273	ttcgactgttagccaatcattt	359736	768650	-
7059	EIF2C4	NM_017629.2	843	agcctatcattgagttcatgt	359750	768666	see also 7058 line
7060	EIF2C4	NM_017629.2	975	gtgacagatgaacgaaaaaac	359754	768667	see also 7058 line
7061	EIF2C4	NM_017629.2	2251	agcaattcgaaaggcatgtatta	359768	768689	see also 7058 line
7062	FLJ20045	NM_017638.1	576	tccgcatgaccatgagttgt	359867	720984	-
7063	LRRG16	NM_017640.2	801	tccatgcagcagcaaaagatt	359899	611600	-
7064	LRRG16	NM_017640.2	804	atgcagcagcagcaaaagattct	359900	611601	see also 7063 line
7065	LRRG16	NM_017640.2	828	tccacgtacattgttaaaat	359904	611604	see also 7063 line
7066	MBTD1	NM_017643.1	171	egggacctgctgggtgatct	359936	749859	transcription_regulat or
7067	MBTD1	NM_017643.1	849	agctatagaccattaaatcttt	359962	749884	see also 7066 line
7068	MBTD1	NM_017643.1	1106	cagcaccagtaaaactattaat	359969	749895	see also 7066 line
7069	MBTD1	NM_017643.1	1323	gtgcagttaaactggatcaac	359978	749907	see also 7066 line
7070	DRE1	NM_017644.2	831	cactaaacactctcaaaaa	130842	531215	-
7071	DRE1	NM_017644.2	948	gtgatgaactgttattggtaa	130845	531220	see also 7070 line
7072	DRE1	NM_017644.2	1416	gccgtgatgtctggatttaac	130860	531231	see also 7070 line
7073	DRE1	NM_017644.2	1479	aaggcagatggcgtcacaaaatg	130864	531232	see also 7070 line
7074	DRE1	NM_017644.2	1480	aggcagatggcgtcacaaaatgg	130865	531233	see also 7070 line
7075	IPT	NM_017646.3	374	aggaaccaattttacattgaat	85841	719784	-
7076	IPT	NM_017646.3	718	tcttagatgagcgttgatgaag	85845	719789	see also 7075 line
7077	FTSj3	NM_017647.2	172	agctaatcgccgcttcaagtc	360066	715728	-
7078	AHI1	NM_017651.3	2229	gtgtggccactcaatcattt	360187	722537	-
7079	AHI1	NM_017651.3	2231	gtggccactcaatcatttat	360188	722538	see also 7078 line
7080	AHI1	NM_017651.3	2232	tggccactcaatcatttatg	360189	722539	see also 7078 line
7081	AHI1	NM_017651.3	3474	tccatcagatgaactaacatcc	360241	722587	see also 7078 line
7082	FLJ20071	NM_017653.2	2110	tggtagtctcttcttagctca	360308	730753	-
7083	FLJ20080	NM_017657.2	316	tggagcagacatcaatcgaatg	145361	805795	-
7084	FLJ20080	NM_017657.2	2738	gagtagcagtggtctactaaccc	145416	805854	see also 7083 line
7085	BTBD5	NM_017658.1	123	tccgagtagtgatgttaaaatt	129404	531108	-
7086	FLJ20084	NM_017659.1	954	tcccaggaagtgatgacttcc	360457	721510	-
7087	TRPM6	NM_017662.3	2793	tccatgctgttcaactaaccc	103364	516833	kinase_related, receptor_activity, channel
7088	TRPM6	NM_017662.3	3101	gactctttgtgtgaatcaaca	103372	516841	see also 7087 line
7089	TRPM6	NM_017662.3	3498	accggtatcgctacatcatgacc	103386	516851	see also 7087 line
7090	C20orf42	NM_017671.2	2066	tacctgtcagatttaaaaggaag	322657	687056	-
7091	TRPM7	NM_017672.2	1453	atctgcattgaccagcttacc	103489	516963	channel, kinase_related

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7092	TRPM7	NM_017672.2	1621	tggagtaagcatgcataaattcc	103496	516972	see also 7091 line
7093	TRPM7	NM_017672.2	1907	cagttgcgaagaagagtoaatc	103514	516986	see also 7091 line
7094	TRPM7	NM_017672.2	2175	aagaataatggtaaaagcattia	103527	516996	see also 7091 line
7095	TRPM7	NM_017672.2	2179	atcaatggctaagcattagttg	103528	516997	see also 7091 line
7096	TRPM7	NM_017672.2	2777	gcctttatcatgcaccaaatgt	103559	517026	see also 7091 line
7097	TRPM7	NM_017672.2	2870	atggaacatgtaccctcagttca	103563	517029	see also 7091 line
7098	TRPM7	NM_017672.2	2886	cagttcaagaatggatgtatt	103564	517032	see also 7091 line
7099	TRPM7	NM_017672.2	2978	cagaagattaaagtattgttag	103566	517035	see also 7091 line
7100	TRPM7	NM_017672.2	3328	gactcttgctaagaatagttt	103578	517053	see also 7091 line
7101	TRPM7	NM_017672.2	3879	ttagagatcgtgtcaactacata	103594	517071	see also 7091 line
7102	TRPM7	NM_017672.2	3882	gagatcgtgtcaactacataaaa	103596	517072	see also 7091 line
7103	TRPM7	NM_017672.2	5312	cccaatacattcattctcc	103637	517123	see also 7091 line
7104	C1orf26	NM_017673.4	2210	cagtacaagggtcaaatatgatg	360542	719334	-
7105	C1orf26	NM_017673.4	2242	cacagacotttgctcaagtaaac	360543	719336	see also 7104 line
7106	C1orf26	NM_017673.4	2647	ccctataactctctaataaag	360561	719349	see also 7104 line
7107	FLJ20125	NM_017676.1	559	atgctataatcatgacagatttg	27031	453654	-
7108	C1orf33	NM_017678.1	766	tcgccagtgatgggaatacttc	360574	781444	-
7109	BCAS3	NM_017679.2	543	ttgtgtagctgtattcacttc	310404	689820	-
7110	BCAS3	NM_017679.2	754	ggggagccgctggctgcttatgc	310414	689826	see also 7109 line
7111	BCAS3	NM_017679.2	1813	cagtcctcaacaagtgttagtga	310432	689850	see also 7109 line
7112	BCAS3	NM_017679.2	1815	gtccaaacaagtgttagttagt	310433	689851	see also 7109 line
7113	FLJ20156	NM_017691.1	584	cacottggtgtgaacttcca	360850	757827	-
7114	BIVM	NM_017693.2	1486	gtgtttgacaaataataagacc	360936	753649	-
7115	BIVM	NM_017693.2	1525	atgctctatgtctatataagc	360941	753651	see also 7114 line
7116	FLJ20160	NM_017694.2	222	ctggatagagaacaattgtgta	360964	800630	-
7117	FLJ20160	NM_017694.2	1419	ttggttcattgggttttgatag	360988	748523	see also 7116 line
7118	FLJ20160	NM_017694.2	1822	atcgagagcgtgttagtoaatga	361003	748536	see also 7116 line
7119	FLJ20160	NM_017694.2	1823	tcggaggcgtgttagtcaattat	361004	748537	see also 7116 line
7120	FLJ20160	NM_017694.2	1824	cggaggcgtgttagtcaattatt	361005	748538	see also 7116 line
7121	FLJ20160	NM_017694.2	1826	gaggcgtgttagtcaattatttt	361006	748539	see also 7116 line
7122	OBDFP	NM_017711.2	347	aaccagcaagtcgcaactgtatct	198959	590948	-
7123	C20orf13	NM_017714.1	359	aacttgaggattctctttaca	203322	593936	-
7124	FLJ20259	NM_017730.2	1700	cagaccaagaatcgtgaactaga	361191	785766	-
7125	FLJ20272	NM_017735.2	671	agcagcattatcttagtgaatg	361324	767456	-
7126	FLJ20275	NM_017737.1	104	ctgactcagacgcaaaagtatt	361414	768126	-
7127	FLJ20275	NM_017737.1	693	cagtgacataaatcatcttgtaa	361425	768139	see also 7126 line
7128	FLJ20277	NM_017739.1	213	ctggaagtataaacgacaaacc	210426	599378	-
7129	FLJ20277	NM_017739.1	769	tgggccttctgtggagcgaagaagg	210430	599386	see also 7128 line
7130	FLJ20277	NM_017739.1	772	gcctctctggagcgaagaaggagg	210431	599387	see also 7128 line
7131	ST7L	NM_017744.4	598	ttgaatggtgttacttccataag	361452	767905	-
7132	ST7L	NM_017744.4	602	atgtgtgtacttccataagcatg	361453	767906	see also 7131 line
7133	ST7L	NM_017744.4	910	tactgtcttcagacacagttagt	361458	767916	see also 7131 line
7134	ST7L	NM_017744.4	1644	cagcaatggaaacgaatagaagg	361474	767938	see also 7131 line
7135	BCOR	NM_017745.4	868	tcctcgactcgccaaaatagat	361493	739394	-

7136	BCOR	NM_017745.4	870	ctcgcactgcgcaataaagtatttc	361494	739395	see also 7135 line
7137	BCOR	NM_017745.4	875	ctgcgaataaagtatttcactga	361497	739396	see also 7135 line
7138	BCOR	NM_017745.4	1692	gagattccgaagaacacactatc	361508	739409	see also 7135 line
7139	FLJ20287	NM_017746.1	855	tcacgtgaggttgagagaagatga	361599	772466	-
7140	FLJ20300	NM_017753.1	394	tgcatatccaaggattctcttgt	361683	803942	-
7141	FLJ20300	NM_017753.1	411	ttctgtcaggacggagacttaatt	361684	803943	see also 7140 line
7142	FLJ20300	NM_017753.1	413	ctgtcaggacggagacttaattga	361685	803944	see also 7140 line
7143	FLJ20300	NM_017753.1	415	gtcaggacggagacttaattgaag	361686	803945	see also 7140 line
7144	FLJ20303	NM_017755.4	633	aagaccacacagtaattgaat	361790	755686	-
7145	FLJ20303	NM_017755.4	841	tccttcttatgacgaatttta	361795	755694	see also 7144 line
7146	FLJ20311	NM_017755.4	843	ctcttcttatgacgaattttatg	361796	755695	see also 7144 line
7147	FLJ20311	NM_017760.4	3156	gcctgtggttgagataagtcacc	362013	747983	-
7148	FLJ20320	NM_017765.1	565	cagacctacacggctgtgtatta	362081	755895	-
7149	FLJ20331	NM_017768.3	792	tgctttatttcggaggagataaa	196894	589223	-
7150	FLJ20331	NM_017768.3	1539	gactcaaacagatcaattcttcc	196923	589249	see also 7149 line
7151	PXK	NM_017771.2	1487	ctcgaaagaagtcacaaacgatct	98633	499193	Kinase related
7152	OSBPL10	NM_017784.3	2079	gtcctgtgggggtctctatgatag	303410	767177	-
7153	OSBPL10	NM_017784.3	2080	tcctgtgggggtctctatgatag	303411	767178	see also 7152 line
7154	C14orf58	NM_017791.1	639	cggctccatcaataacacatctca	362426	756523	-
7155	C20orf21	NM_017798.2	1819	caggagggtgcccttagaaaaagc	362604	784370	-
7156	UBE2R2	NM_017811.2	789	gacaacagctcagattgcttta	231306	616884	-
7157	SARS2	NM_017827.2	829	gtctggccacccggctctattacc	100177	514435	-
7158	OCIA	NM_017830.1	168	atgaatggaggggcgtgatttctg	362840	713507	-
7159	OCIA	NM_017830.1	333	ttgattactcaaggataaattag	362850	713513	see also 7158 line
7160	FLJ20487	NM_017841.1	363	atgactggagattattactactgg	363009	715894	-
7161	C1orf27	NM_017847.2	470	aacggagtgacacttcaactttgt	363039	756783	-
7162	FLJ20516	NM_017858.1	303	aggtcatgagcctgaagacttga	363173	716066	-
7163	FLJ20516	NM_017858.1	433	cagacctgttataaacgaattcg	363176	716074	see also 7162 line
7164	FLJ20530	NM_017884.1	1041	atgttcggggaggacattgtgaat	363266	800745	-
7165	FLJ20530	NM_017884.1	1161	ttcgatatatacactcagataaat	363269	800753	see also 7164 line
7166	FLJ20530	NM_017884.1	1406	ctcagagaaattgactacacaaac	363279	800756	see also 7164 line
7167	FLJ20531	NM_017885.2	339	ttggaccggttacacttcttcagg	363287	807703	-
7168	FLJ20558	NM_017880.1	1446	atcaaacatgcactatcagttt	188402	582242	-
7169	FLJ20558	NM_017880.1	1451	accatgcactatcagtttgg	188403	582244	see also 7168 line
7170	PINX1	NM_017884.3	238	aagatgggggtggctctaaaggaaa	64934	478914	cell cycle
7171	C6orf96	NM_017909.1	1311	cagaagagtgaaagtcagtaag	363876	715976	-
7172	C14orf10	NM_017917.2	819	ttccatcatgacttcttcttaatt	138236	543098	-
7173	C14orf10	NM_017917.2	1145	gtcaagaacaaaattggtttct	138243	543106	see also 7172 line
7174	STX17	NM_017919.1	604	aaccttagaagcggacttaattg	305781	724222	-
7175	STX17	NM_017919.1	605	accttagaagcggacttaattga	305782	724223	see also 7174 line
7176	STX17	NM_017919.1	688	cagcatctgcagaccatgtcaaca	305783	724224	see also 7174 line
7177	PRPF39	NM_017922.2	2446	cagaactcttggaattatggaca	302048	799341	-
7178	C14orf119	NM_017924.2	368	aggagcgcaatgaattgtcaga	364062	711572	-
7179	FLJ20716	NM_017938.2	393	tggctcttatcgtgtttatcagc	364357	781541	-

7180	USP47	NM_017944.2	995	gtgaacattgtaagaagaagtgt	190068	794391	-	-
7181	CADPS2	NM_017954.7	1012	gtcgggaattaaattacaataa	364780	768324	-	-
7182	CADPS2	NM_017954.7	1744	atgatgaacaggacagaattat	364812	768345	see also 7181 line	-
7183	CADPS2	NM_017954.7	2452	aagctgcttgatcaattacaact	364824	768358	see also 7181 line	-
7184	CADPS2	NM_017954.7	2455	ctgcttgatcaattacaactaga	364825	768359	see also 7181 line	-
7185	C14orf102	NM_017970.2	3042	atgtacagattcagaataagtc	321311	808617	-	-
7186	APG16L	NM_017974.2	1425	tacgcagcaagctgcataaag	364950	532060	-	-
7187	APG16L	NM_017974.2	1495	atgtataatgagtgacatttg	364955	532063	see also 7186 line	-
7188	FLJ10036	NM_017975.2	585	caccatgctcacatcttaata	364968	725630	-	-
7189	RUFY2	NM_017987.2	60	atggctaaactgagtgataaagg	159956	559603	-	-
7190	PDPR	NM_017990.3	3094	ctcgaattgagaagtttttgc	214810	812901	-	-
7191	FLJ10094	NM_017993.1	522	gactgaatcacccttaacc	60847	482372	-	-
7192	FLJ10094	NM_017993.1	928	caggccaggatgacttctatga	60861	482382	see also 7191 line	-
7193	FLJ10094	NM_017993.1	1330	aacgctctaccagacaaaagc	60865	482389	see also 7191 line	-
7194	FLJ10094	NM_017993.1	1375	cagcgcaagaacatagacattg	60866	482391	see also 7191 line	-
7195	FEZL	NM_018008.2	783	cggcctgctcgagacaagtcc	365229	746473	-	-
7196	ESRRB1	NM_018010.2	824	aactgaagtacagattaggaact	365267	687750	receptor activity	-
7197	ESRRB1	NM_018010.2	978	cagcagcgagaaaagtacatca	365271	687756	see also 7196 line	-
7198	FLJ10154	NM_018011.1	479	gcccgaaccatcgacatctcg	365281	790880	-	-
7199	BCL1A	NM_018014.2	245	aaggcaaacccagcaccttaagc	365293	525893	-	-
7200	BCL1A	NM_018014.2	444	tggcagctctgttagaaaag	365301	525895	see also 7199 line	-
7201	BCL1A	NM_018014.2	548	cagaggatgaagattgttatca	365305	525898	see also 7199 line	-
7202	BCL1A	NM_018014.2	702	cccgaggatgttttaagatg	365308	525900	see also 7199 line	-
7203	BCL1A	NM_018014.2	736	tacaatgatcaactgtcaaaa	365311	525902	see also 7199 line	-
7204	BCL1A	NM_018014.2	907	ctccatggatgaattatgcaga	365316	525905	see also 7199 line	-
7205	BCL1A	NM_018014.2	936	cccccttaacctgtaagaatc	365317	525907	see also 7199 line	-
7206	BCL1A	NM_018014.2	1154	agcctcccgcatgattctct	365319	525912	see also 7199 line	-
7207	BCL1A	NM_018014.2	1157	ctcccgcatgattctcttagg	365320	525913	see also 7199 line	-
7208	BCL1A	NM_018014.2	1343	ccccggtcaagtccaagtcatgc	365322	525916	see also 7199 line	-
7209	BCL1A	NM_018014.2	2384	gaggagcacgccccatattagt	365324	525922	see also 7199 line	-
7210	BCL1A	NM_018014.2	2386	ggagagcacgccccattatgtg	365325	525923	see also 7199 line	-
7211	FLJ10178	NM_018015.2	164	ctgcgatactatggaaacctga	365332	788141	-	-
7212	SLC38A4	NM_018018.2	1351	ctccggagcgctatgcaatc	259747	642004	-	-
7213	FLJ10210	NM_018027.2	1091	tccagtatgactaccatgataa	322883	774226	-	-
7214	LUC7L	NM_018032.2	234	tggctggagcgcgcattgattga	365499	719873	-	-
7215	FLJ10244	NM_018037.1	737	tggcggttaattagtcgaagaga	295788	664416	signal transduction	-
7216	FLJ10244	NM_018037.1	739	ggcggttaattagtcgaagaga	295789	664417	see also 7215 line	-
7217	FLJ10305	NM_018052.3	867	gtcgtgcccagacattaacctgc	365923	761297	-	-
7218	RICH1	NM_018054.3	1116	gtgtgaggatcaagcaaaaaa	99039	753280	-	-
7219	RICH1	NM_018054.3	1173	caccacaaaatttggtaactt	99042	753285	see also 7218 line	-
7220	NTT73	NM_018057.2	1027	aagtctgccaccaccttact	255863	640046	-	-
7221	FLJ10326	NM_018060.2	241	tagccaatcgattccatgatg	82478	814266	-	-
7222	FLJ10326	NM_018060.2	242	agccaatcgattccatgatga	82479	814267	see also 7221 line	-
7223	FLJ10326	NM_018060.2	536	ggcgctgttttatcgatctaca	82486	814276	see also 7221 line	-

7224	FLJ10326	NM_018080.2	540	ttgatttatcatattacaacc	82487	814277	see also 7221 line
7225	FLJ10326	NM_018080.2	1476	agcacaacactgacatattgt	82518	814311	see also 7221 line
7226	FLJ10330	NM_018061.1	273	tctgtctgctctacttcaaa	365944	719588	-
7227	FLJ10330	NM_018061.1	275	ctgtctgctctacttcaaatg	365945	719589	see also 7226 line
7228	FLJ10330	NM_018061.1	277	gtctgctctacttcaaatgac	365946	719590	see also 7226 line
7229	FLJ10330	NM_018061.1	330	tgtgtgagagagacttacttaag	365948	719592	see also 7226 line
7230	FLJ10330	NM_018061.1	488	ctgaagttaactcgaagaagaatg	365949	719594	see also 7226 line
7231	HELLS	NM_018063.3	1248	gactgtactccttgcacaaaca	28096	697038	-
7232	FLJ10375	NM_018075.2	1055	ctgccttctgtttaataac	366212	749497	-
7233	FLJ10375	NM_018075.2	1056	tgccttctgtgttaataact	366213	749498	see also 7232 line
7234	FLJ10377	NM_018077.1	2137	ctcacacagaggcccaaatca	60996	479318	-
7235	FLJ10378	NM_018078.2	362	gtgtgaccactccacttagatg	366309	758964	-
7236	FLJ10378	NM_018078.2	363	tgggtaccactccacttagatg	366310	758965	see also 7235 line
7237	FIGN	NM_018086.1	337	gggtcccatctcaggatattgc	82305	502376	-
7238	FIGN	NM_018086.1	1529	gtgcacagccctcggtatttt	82331	502404	see also 7237 line
7239	FIGN	NM_018086.1	1601	gtccagtcagtcgagtgagaacc	82334	502408	see also 7237 line
7240	FIGN	NM_018086.1	1653	aacttgagctgagaccacaaatcg	82338	502409	see also 7237 line
7241	FIGN	NM_018086.1	1657	tggctgagagaccacaaatcgatg	82340	502410	see also 7237 line
7242	FIGN	NM_018086.1	1767	cacagcaggaccacagataatag	82348	502414	see also 7237 line
7243	FIGN	NM_018086.1	1770	agcaggaccacagataatagtag	82349	502415	see also 7237 line
7244	FIGN	NM_018086.1	1771	gcgaggaccacagataatagtag	82350	502416	see also 7237 line
7245	FIGN	NM_018086.1	1773	gaggcaccagataatagtagcaac	82351	502417	see also 7237 line
7246	FIGN	NM_018086.1	1965	gaggccggtacatacaagact	82359	502422	see also 7237 line
7247	FIGN	NM_018086.1	1968	gccgttacatatacaagactttg	82360	502423	see also 7237 line
7248	FIGN	NM_018086.1	1969	ccggttacatatacaagactttga	82361	502424	see also 7237 line
7249	FLJ10407	NM_018087.3	1099	ctcatgatacttccaataatct	366526	734260	-
7250	FLJ10407	NM_018087.3	1308	gtggacatccccacaaattggaca	366534	734272	see also 7249 line
7251	FLJ10407	NM_018087.3	1840	gtcaaaacgggtgtgataatgt	366546	734285	see also 7249 line
7252	ELP3	NM_018091.3	46	ctgatgatgctgactataggaga	215083	602379	-
7253	FLJ10439	NM_018093.1	1079	tggagcataagggtttatctcaag	366637	751055	-
7254	ECT2	NM_018098.4	541	gggtggagatttgcgaagaagact	295691	664559	kinase, related
7255	ECT2	NM_018098.4	650	aagccagaatggatttataaagc	295697	664566	see also 7254 line
7256	G14orf130	NM_018108.2	1113	acccttagcagcagtagtagatg	227658	615174	-
7257	FLJ10486	NM_018109.2	1048	aagttccgaactcctttatatat	61024	478060	-
7258	FLJ10486	NM_018109.2	1051	ttccgaactcctttatatatg	61025	478061	see also 7257 line
7259	LMR	NM_018113.1	1593	gtgactttggagcgttcaactgg	249751	737999	-
7260	WDR11	NM_018117.1	322	ctggggctggcgaaggtttaattg	183605	577433	-
7261	WDR11	NM_018117.1	2556	gagctgaagtgtgggatactaaa	183676	577498	see also 7260 line
7262	WDR11	NM_018117.1	2557	agctgaagtgtgggatactaaaag	183677	577499	see also 7260 line
7263	WDR11	NM_018117.1	3664	gacgttcacagcatgagatact	183703	577526	see also 7260 line
7264	RPC5	NM_018119.2	2243	atggtggcatgtgttactctaaa	208771	598535	transcription_regulat
7265	C10orf6	NM_018121.2	3317	atctatatactcagaaggtacc	366923	776804	-

7266	FLJ10514	NM_018122.3	999	atggggaatatctctgttaatt	82596	480171	-	-
7267	FLJ10514	NM_018122.3	1984	aacactatgacttggttttaaat	82626	480195	see also 7266 line	-
7268	FLJ10521	NM_018125.2	807	caggactaagagagacacttgg	366973	773325	-	-
7269	FLJ10525	NM_018126.1	377	tgaattcatgatgaccataaa	280075	666649	-	molecular_function unknown
7270	PNPO	NM_018129.1	420	tggtctccgtcttctcaact	225920	612553	-	-
7271	ASPM	NM_018136.2	4497	gtgcttcaagcccaaaagtat	367337	700035	-	microcephaly(小頭症)
7272	ASPM	NM_018136.2	6140	cagtcactatcactgtataaac	367402	700087	see also 7271 line	-
7273	FLJ10569	NM_018142.1	578	gtgatgtctctctctaataatt	367609	730170	-	-
7274	FLJ10569	NM_018142.1	752	aacgtactctcagaagtacata	367618	730178	see also 7273 line	-
7275	FLJ10569	NM_018142.1	753	acgtactctcagaagtacataa	367619	730179	see also 7273 line	-
7276	FLJ10569	NM_018142.1	756	tagctctcagaagtacataatag	367620	730180	see also 7273 line	-
7277	FLJ10572	NM_018143.1	1254	gccagggttgctaaactgtag	131267	532599	-	-
7278	FLJ10572	NM_018143.1	1625	tgccgttatgacaattactgc	131278	532612	see also 7277 line	-
7279	FLJ10572	NM_018143.1	1808	gagcagcattgtctattacaaa	131281	532616	see also 7277 line	-
7280	SEC61A2	NM_018144.2	1007	atgtgtctgtctgttagtgg	255619	639801	-	-
7281	FLJ10581	NM_018146.2	595	cagcctcattaaaggtaaatgtg	51626	472799	-	-
7282	FLJ10581	NM_018146.2	596	agcctcattaaaggtaaatgtga	51627	472800	see also 7281 line	-
7283	FLJ10581	NM_018146.2	642	tcgtaacgccacagaataatag	51629	472801	see also 7281 line	-
7284	FLJ10587	NM_018149.2	923	ccctggaggacacagatataga	248631	620846	-	-
7285	FLJ10587	NM_018149.2	1220	caggccagctagtgtgattcaact	248643	620849	see also 7284 line	-
7286	FLJ10587	NM_018149.2	2600	ctgggcctgcacaaagtaataaaa	248688	620894	see also 7284 line	-
7287	FLJ10587	NM_018149.2	2601	tgggcctgcacaaagtaataaaa	248689	620895	see also 7284 line	-
7288	hSyn	NM_018157.1	232	tggagctactccgcattctctcc	367780	808719	-	-
7289	hSyn	NM_018157.1	1104	agctatagagagggtctactcc	367811	808746	see also 7288 line	-
7290	hSyn	NM_018157.1	1499	tggctatttagaggaaaccaatgc	367820	808762	see also 7288 line	-
7291	FLJ10637	NM_018164.1	1432	tacagactaccggtattacagatt	367854	752723	-	-
7292	FLJ10637	NM_018164.1	1434	cagactaccggtattacagattt	367855	752724	see also 7291 line	-
7293	FLJ10637	NM_018164.1	1436	gactaccggtattacagatttgg	367856	752725	see also 7291 line	-
7294	FLJ10637	NM_018164.1	1496	gaccacagataaaaatcgtatgg	367858	752729	see also 7291 line	-
7295	FLJ10637	NM_018164.1	1613	atgcaagcgggtgttccattagc	367863	752741	see also 7291 line	-
7296	FLJ10637	NM_018164.1	1697	tacaacttagttgatggaaaag	367866	752748	see also 7291 line	-
7297	PB1	NM_018165.2	3633	ctctcagagcccaactgaaataac	18871	453313	transcription_regulat or	-
7298	PB1	NM_018165.2	3733	aggttttcaactctctgtaaaagt	18874	453317	see also 7297 line	-
7299	LG12	NM_018176.2	340	ctgttcattgaagggaacaaaat	367999	755231	-	-
7300	LG12	NM_018176.2	1551	caccacagagagattttctttt	368028	755251	see also 7299 line	-
7301	LG12	NM_018176.2	1552	accgacagagagattttctttt	368029	755252	see also 7299 line	-
7302	GPP34R	NM_018178.3	428	ggcatgcggggtcgaatctatct	368041	760545	-	-
7303	GPP34R	NM_018178.3	511	cagcccaacaggtgatgttttac	368046	760547	see also 7302 line	-
7304	ATF7IP	NM_018179.3	2086	aggccaagatagccagggttaacc	325255	525848	-	-
7305	ATF7IP	NM_018179.3	2631	gtgggtgggtcttaccaaaatcc	325269	525858	see also 7304 line	-
7306	ATF7IP	NM_018179.3	3461	aacaaccacatatgtgttaaca	325288	525890	see also 7304 line	-
7307	FLJ10700	NM_018182.1	327	tgttaagaagggtcgcaaacacc	368139	756431	-	-

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7308	FLJ10700	NM_018182.1	921	ctcaactatcccccttcaatgg	368142	756436	see also 7307 line	
7309	BBS7	NM_018190.2	923	tgggtatgggttaagattta	368262	730921	-	-
7310	BBS7	NM_018190.2	2030	tggtaagaagtcagttaatt	368298	730963	see also 7309 line	
7311	MLAT4	NM_018192.2	2086	gtgactgcctctataaaacaaa	222514	609776	-	-
7312	TMLHE	NM_018196.1	1030	tgcattgaagcatgaatatatt	224603	611018	-	-
7313	ZFP64	NM_018197.2	730	tgcgaagtcacgcacaaaagc	43962	699638	transcription_regulat	-
7314	C14orf114	NM_018199.1	744	tgggtatttctgccagaaaatca	58317	481896	-	-
7315	HMG20A	NM_018200.2	514	tcccccttacaggatatttcg	4952	460250	or	-
7316	HMG20A	NM_018200.2	672	cagagataaggagcgttacatga	4955	460253	see also 7315 line	
7317	HMG20A	NM_018200.2	674	gagataaggagcgttacatgaag	4956	460254	see also 7315 line	
7318	HMG20A	NM_018200.2	754	gaccgtcagaagaagcaaatcca	4957	460256	see also 7315 line	
7319	VPS35	NM_018206.2	385	cagttggagttgtatgtcaag	137058	653008	-	-
7320	VPS35	NM_018206.2	391	gaattgtatgtcaagtcattt	137059	653009	see also 7319 line	
7321	ARFGAP1	NM_018209.2	340	agctgtgggaatgctaagttcc	21503	454973	-	-
7322	ENAH	NM_018212.2	1505	cagaagacaatgccctttaact	368495	528882	-	-
7323	PANK4	NM_018216.1	1860	tgccttaatttcgcagataaca	95680	782093	kinase_related	-
7324	PANK4	NM_018216.1	1872	cgagataaacagtcgaatagaca	95681	782095	see also 7323 line	
7325	PANK4	NM_018216.1	1874	cgagataaacagtcgaatagacac	95682	782096	see also 7323 line	
7326	PANK4	NM_018216.1	1881	cagtgagataagacatcatttgg	95683	782097	see also 7323 line	
7327	C20orf31	NM_018217.1	757	ctggagagcgcggcagatctcg	138431	543703	-	-
7328	CHFR	NM_018223.1	408	acgtggcatacctctatgaatct	306698	777938	-	-
7329	RNPEPL1	NM_018226.2	1038	gggctactgtctgtgtactacc	186409	478131	membrane alanyl aminopeptidase	-
7330	CARP-1	NM_018237.1	148	cgccatgggtactcagtttaca	23584	453367	-	-
7331	CARP-1	NM_018237.1	293	agcaactatcagtttaacacaaa	23589	453372	see also 7330 line	
7332	CARP-1	NM_018237.1	728	gagaattcaaacactaccacaaac	23602	453383	see also 7330 line	
7333	CARP-1	NM_018237.1	737	aacactaccaatcagactcagtt	23603	453384	see also 7330 line	
7334	CARP-1	NM_018237.1	1473	atggctagccctagtattggaaga	23621	453407	see also 7330 line	
7335	CARP-1	NM_018237.1	1558	atcctgtagactgttaagttt	23625	453410	see also 7330 line	
7336	CARP-1	NM_018237.1	1559	tcctgtagactgttaagttt	23626	453411	see also 7330 line	
7337	CARP-1	NM_018237.1	1743	tgttacogttttgcagagattcg	23637	453418	see also 7330 line	
7338	CARP-1	NM_018237.1	1785	accacaaaggcgtcagattcc	23638	453419	see also 7330 line	
7339	FLJ10842	NM_018238.2	441	cagatgaggtactccttcagtaag	208439	597966	kinase_related	-
7340	FLJ10842	NM_018238.2	555	atgccacacttgccttggaaa	208441	597972	see also 7339 line	
7341	FLJ10847	NM_018242.2	1353	atcgagatcgctgtgttttc	258586	643019	-	-
7342	FLJ10853	NM_018246.1	307	ctgcaagatgaacaacgttaattg	368974	758558	-	-
7343	FLJ10853	NM_018246.1	308	tgcgaatgaacaacgttaattg	368975	758559	see also 7342 line	
7344	C6orf67	NM_018247.1	547	tactgtaaatctcagatgatag	278013	747580	-	-
7345	C6orf67	NM_018247.1	1175	tgtctagtaataatcataaat	278043	747608	see also 7344 line	
7346	FLJ10876	NM_018254.2	241	atccagatgccaaatttgatga	26717	456831	-	-
7347	WD10	NM_018262.2	2096	gaccacaatgacctgtttctgg	369382	742846	-	-
7348	ASXL2	NM_018263.2	130	gocgccagacggtcttagaaa	369409	773392	-	-

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7349	ASXL2	NM_018283.2	131	ccgcaagacggctcttagaaaa	369410	773393	see also 7348 line
7350	ASXL2	NM_018283.2	1144	gtggaattcagcaagagattga	369430	773409	see also 7348 line
7351	ASXL2	NM_018283.2	2920	atccctgtaataatctttagt	369469	773450	see also 7348 line
7352	ASXL2	NM_018283.2	4046	ccagatagggcccaagctataga	369502	773479	see also 7348 line
7353	ASXL2	NM_018283.2	4059	aagctatagagcagatgacaatg	369503	773481	see also 7348 line
7354	ASXL2	NM_018283.2	4060	agctatagagcagatgacaatg	369504	773482	see also 7348 line
7355	ASXL2	NM_018283.2	4126	agccaggatctcagcaatgtagg	369505	773486	see also 7348 line
7356	FLJ10902	NM_018286.1	1317	atgtgagcaactcattatgtgt	369543	724802	-
7357	FLJ10902	NM_018286.1	1511	tgtgtgcggcagcagagatgta	369546	724808	see also 7356 line
7358	FLJ10902	NM_018286.1	1514	tgcggcagcagcagatgttat	369547	724809	see also 7356 line
7359	FLJ10902	NM_018286.1	1729	tctgcaactactatgtttttt	369558	724815	see also 7356 line
7360	FLJ10922	NM_018273.2	214	cagtaaccgagcagcttcactcc	369619	753887	-
7361	FLJ10925	NM_018275.3	1321	cggacactacgagcgttcactgt	236173	768297	-
7362	PSPC1	NM_018282.1	980	tgtcaacctgggacatttgaat	65119	485528	-
7363	ARHGAP1	NM_018287.4	657	tctgtgatccaatcagaatttt	369706	738416	-
7364	ARHGAP1	NM_018287.4	755	gactcacattctcctaaagtctc	369707	738423	see also 7363 line
7365	ARHGAP1	NM_018287.4	1361	tggctcaagcattgtgatgaca	369732	738443	see also 7363 line
7366	ARHGAP1	NM_018287.4	1364	ctcaagcattgtgatgacaagg	369733	738444	see also 7363 line
7367	ARHGAP1	NM_018287.4	1951	cactgttataatgattgttta	369747	738459	see also 7363 line
7368	ARHGAP1	NM_018287.4	1953	ctgttataatgattgttttaaa	369748	738460	see also 7363 line
7369	PHF10	NM_018288.2	378	ttgcgcagtgatgaagtgttga	34654	452992	transcription_regulat or
7370	PHF10	NM_018288.2	1138	aggctgaatcacttatcactgc	34673	453012	see also 7369 line
7371	PHF10	NM_018288.2	1364	atcaggtcgtgattgttgact	34678	453020	see also 7369 line
7372	NGLY1	NM_018297.2	1354	ttgtgagctgttggaatttata	369944	594004	-
7373	FLJ11016	NM_018301.2	516	ctgactgctactctctcttaag	61075	482452	-
7374	SEC5	NM_018303.4	910	aagtattagctggaaagacaag	270393	717359	-
7375	SEC5	NM_018303.4	1081	cggaggtgcaagttttcaagaaa	270396	717369	see also 7374 line
7376	SEC5	NM_018303.4	1084	agggtcaagttttcaagaatat	270397	717370	see also 7374 line
7377	SEC5	NM_018303.4	2512	caggtgcagaaactatttaaaa	270434	717422	see also 7374 line
7378	ARHT1	NM_018307.2	351	atggattcctctcataaatgaaa	108428	518898	signal_transduction
7379	ARHT1	NM_018307.2	422	ctgactgtgtggaatatagtagt	108429	518900	see also 7378 line
7380	ARHT1	NM_018307.2	865	tggactgtcttcacagatttgg	108439	518914	see also 7378 line
7381	ARHT1	NM_018307.2	869	ctgtgcttcagcagatttggat	108440	518915	see also 7378 line
7382	ARHT1	NM_018307.2	1574	tgtactactgtgccagagattttt	108473	518936	see also 7378 line
7383	ARHT1	NM_018307.2	1752	tgccccagtagaagatatctttg	108478	518941	see also 7378 line
7384	FLJ11046	NM_018309.1	88	agcaggaggtgtgtatctgaaa	370031	723063	-
7385	FLJ11046	NM_018309.1	206	tggcatcatggtgtgattttt	370035	723066	see also 7384 line
7386	FLJ11046	NM_018309.1	208	ggcatatggtgtgtatttttag	370036	723068	see also 7384 line
7387	FLJ11046	NM_018309.1	214	atggagatgtattttgacttgc	370037	723070	see also 7384 line
7388	FLJ11046	NM_018309.1	1979	aggtattgtattccaatcagg	370093	723115	see also 7384 line
7389	C11orf23	NM_018312.2	650	agcaaggtgtctaagtattcttat	370105	739212	-
7390	C11orf23	NM_018312.2	938	ctgagcagagaccagatgttaca	370117	739218	see also 7389 line
7391	C11orf23	NM_018312.2	1649	aagagggaacacggtagatctagc	370136	739248	see also 7389 line



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7392	C11orf23	NM_018312.2	1689	tgcaacaaatgacgtccatttt	370138	739250	see also 7389 line	
7393	C11orf23	NM_018312.2	1692	aacaaatgacgtccattttatt	370139	739251	see also 7389 line	
7394	FBXW7	NM_018315.2	309	tacagaaatattggtttctacg	370162	443810	-	-
7395	FBXW7	NM_018315.2	319	atgggtttctacggcacattaaa	370163	443811	see also 7394 line	
7396	FBXW7	NM_018315.2	320	tgggtttctacggcacattaaaa	370164	443812	see also 7394 line	
7397	FBXW7	NM_018315.2	321	gggtttctacggcacattaaaa	370165	443813	see also 7394 line	
7398	FBXW7	NM_018315.2	1519	gtgagtgatctcttgatacatc	370201	443839	see also 7394 line	
7399	FLJ11082	NM_018317.1	605	tcgcaaccccaattatgaacacg	370217	753093	-	-
7400	TDPI	NM_018319.2	1000	ctgcaggcaaaagtggatattg	199018	734207	-	-
7401	TDPI	NM_018319.2	1027	tggcaacacacacacgaaatga	199019	734211	see also 7400 line	
7402	TDPI	NM_018319.2	1620	ggggtctcttccctatgcatc	199041	734222	see also 7400 line	
7403	RNF121	NM_018320.3	412	gacaaccccaagggtggttata	370285	738138	-	-
7404	BRIX	NM_018321.2	247	atgttgatgcctcattctaaagc	370303	676207	molecular_function unknown	-
7405	BRIX	NM_018321.2	787	aacatgcacggcggtgctaaag	370320	676226	see also 7404 line	
7406	BRIX	NM_018321.2	791	tgcctcggcggtgctaaagatcc	370322	676227	see also 7404 line	
7407	LRRN3	NM_018334.3	778	agctacactacactagtacaaag	370439	701473	-	-
7408	LRRN3	NM_018334.3	1953	atgttcgcaagtgcatctcagg	370488	701523	see also 7407 line	
7409	LRRN3	NM_018334.3	2457	atgtcaagggtatataacttact	370507	701542	see also 7407 line	
7410	RIOK2	NM_018343.1	258	tccagggtcctcgggtgacaaat	283310	666704	-	-
7411	RIOK2	NM_018343.1	260	caggctcctcgggtgacaaatgc	283311	666705	see also 7410 line	
7412	ABCF3	NM_018358.1	642	gtgcgaattgagaactttgattg	71055	492837	-	-
7413	FLJ11200	NM_018359.1	1406	aaggatcactactataacttatg	370738	752497	-	-
7414	LPAAT-e	NM_018361.1	183	caccgggtccagatattgctat	215531	602847	-	-
7415	LPAAT-e	NM_018361.1	184	accgggtccagatattgctata	215532	602848	see also 7414 line	
7416	LPAAT-e	NM_018361.1	190	gtccagatattgctatattgaga	215534	602849	see also 7414 line	
7417	FLJ11220	NM_018364.2	834	gcggaggagacgccttaaaatgt	370804	777541	-	-
7418	FLJ11220	NM_018364.2	840	aagaagccttaaaatgatacaata	370806	777542	see also 7417 line	
7419	FLJ11220	NM_018364.2	1214	aggagtttctgcttgacattc	370823	777550	see also 7417 line	
7420	PHCA	NM_018367.3	273	agcaactcacagtggtaggaatgg	205409	596103	hydrolase	-
7421	PHCA	NM_018367.3	516	tgggaattgttgctttacattag	205416	596113	see also 7420 line	
7422	PHCA	NM_018367.3	520	atgttggttttaccattagttact	205417	596114	see also 7420 line	
7423	XTP1	NM_018369.1	819	gcctatgacttgggatttgaata	317535	680567	-	-
7424	FLJ11259	NM_018370.1	453	aaggatatccacagaaatcaatg	370894	731206	-	-
7425	FLJ11259	NM_018370.1	454	aggatatccacagaaatcaatgg	370895	731207	see also 7424 line	
7426	ChGn	NM_018371.3	1426	atggccaacacgctttatcaatg	218544	606422	-	-
7427	ChGn	NM_018371.3	1428	ggccaacacgctttatcaatgta	218545	606423	see also 7426 line	
7428	ChGn	NM_018371.3	1429	ggccaacacgctttatcaatgttat	218546	606424	see also 7426 line	
7429	FLJ11294	NM_018383.2	1941	gtctcagattcctcaagttttc	280182	655029	molecular_function unknown	-
7430	FLJ11294	NM_018383.2	4095	ctggggtagaggagtaacatga	280199	655040	see also 7429 line	
7431	FLJ11294	NM_018383.2	4097	ggggtagaggagtaacatgaac	280200	655041	see also 7429 line	
7432	STRBP	NM_018387.2	928	acctctaattaggagcaattgg	48829	472119	-	-
7433	STRBP	NM_018387.2	1127	ccacacatgggacacattgaaag	48836	472122	see also 7432 line	

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7434	STRBP	NM_018387.2	1222	gagacgagtaatggaggtgttgg	48842	472127	see also 7432 line
7435	STRBP	NM_018387.2	2157	ctgaccacatcgccaaataat	48868	472151	see also 7432 line
7436	STRBP	NM_018387.2	2161	accacatcgccaaataataaga	48870	472152	see also 7432 line
7437	FLJ11336	NM_018393.2	1670	ctgcctggccaactatacaag	371138	793879	-
7438	FLJ11336	NM_018393.2	1701	ctgtccctactacagtcgaatcc	371139	793882	see also 7437 line
7439	CHDH	NM_018397.1	1731	accctcgtgaccctgaagatg	226461	772106	-
7440	CACNA2D	NM_018398.1	452	accacgacacgtacaacaag	328423	694340	-
7441	CACNA2D	NM_018398.1	501	tgtctgaatctctaaacaagt	328427	694345	see also 7440 line
7442	CACNA2D	NM_018398.1	1019	ggccatcgtctctaactgatg	328440	694353	see also 7440 line
7443	CACNA2D	NM_018398.1	1366	tagccatgctgtgttttagtaag	328449	694361	see also 7440 line
7444	CACNA2D	NM_018398.1	1755	atcaagggtactcttccagttt	328461	694377	see also 7440 line
7445	CACNA2D	NM_018398.1	1758	aagggtactcttccagtttagg	328462	694378	see also 7440 line
7446	VNN3	NM_018399.2	589	acgtaccataagtcacaatttt	203558	594459	-
7447	SCN3B	NM_018400.2	1004	ggggcggtaaagatttccttatt	262249	647235	voltage-gated sodium channel
7448	HS27598	NM_018403.1	672	aagcacccgagactctagaagaa	371153	747920	-
7449	CENT2	NM_018404.1	373	cagagtcaccgcttttactaca	23984	457111	-
7450	ST7	NM_018412.2	515	gagggttgacaacaactctcc	371250	712438	-
7451	ST7	NM_018412.2	584	gtgtctcgaagtcaagatgg	371252	712441	see also 7450 line
7452	ST7	NM_018412.2	1585	taccacatctgtacagaacagc	371281	712475	see also 7450 line
7453	CHST11	NM_018413.2	1280	cagctgtacgaagtctacaaact	218568	605562	-
7454	TRERF1	NM_018415.1	1027	aaggcacctgtattatgactac	42885	469904	transcription_regulat or
7455	TRERF1	NM_018415.1	1028	aggcacctgtattatgactacc	42886	469905	see also 7454 line
7456	TRERF1	NM_018415.1	2419	atgtgaaccacgcacacacatt	42895	469916	see also 7454 line
7457	TRERF1	NM_018415.1	2717	atgtcactctttagcaaatcacc	42900	469923	see also 7454 line
7458	TRERF1	NM_018415.1	2801	cacttacagcaaaagactttatt	42903	469926	see also 7454 line
7459	FHX	NM_018416.2	1541	aagacacccctccagatgatgc	3669	444015	transcription_regulat or
7460	FHX	NM_018416.2	2453	gacctcagaccagcatcacattg	3680	444020	see also 7459 line
7461	EPB41L4B	NM_018424.1	582	agcgtggaccctgcgaacacgc	273441	656499	-
7462	EPB41L4B	NM_018424.1	1161	ctgaccccgacagcagcatattat	273453	656516	see also 7461 line
7463	EPB41L4B	NM_018424.1	1163	gaccccgacagcagcatattatct	273454	656517	see also 7461 line
7464	EPB41L4B	NM_018424.1	1165	cccccacagcagcatattatcttt	273455	656518	see also 7461 line
7465	EPB41L4B	NM_018424.1	1166	cccgacagcagcatattatctttg	273456	656519	see also 7461 line
7466	EPB41L4B	NM_018424.1	1182	atcttgaaggaggttaacaaact	273458	656520	see also 7461 line
7467	PI4KII	NM_018425.2	684	cogtacaagggttagtatacctgg	207982	597907	kinase_related
7468	PI4KII	NM_018425.2	1131	ctggagggcagcatctcttttact	207989	597912	see also 7467 line
7469	DOK5	NM_018431.2	647	ttgatgccatctctaaacttaga	170553	567107	-
7470	RNF130	NM_018434.4	493	acgcgagcagcaggtactacacg	191635	585179	-
7471	RNF130	NM_018434.4	868	ctgtcatgataacagaattgagg	191645	585186	see also 7470 line
7472	RNF130	NM_018434.4	986	ctctctagtcttctgtcgaat	191650	585189	see also 7470 line
7473	RNF130	NM_018434.4	1062	cagaagatcaggtacacaaatgc	191653	585193	see also 7470 line
7474	RNF130	NM_018434.4	1126	aagcgaatgaattgacaacc	191654	585194	see also 7470 line

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7475	RNF130	NM_018434.4	1310	tcctatgtgcacaaactaatat	191657	585201	see also 7470 line
7476	RNF130	NM_018434.4	1539	atcaacattgcagtaacaaaaga	191663	585210	see also 7470 line
7477	RNF130	NM_018434.4	1628	cacagctagctgaatgctaag	191665	585211	see also 7470 line
7478	FBXO6	NM_018438.2	518	aagtcacaagaagtatttgcaca	371545	706118	-
7479	IMPACT	NM_018439.1	112	gaggagtggtgttcattatga	280925	667318	-
7480	SELS	NM_018445.2	239	tggaacctgtgtgttgtaaa	327348	715425	receptor activity
7481	AD-017	NM_018446.1	972	caactcctctgctctatctatt	212046	600438	-
7482	AD-017	NM_018446.1	973	acactcctctgctctatctatt	212047	600439	see also 7481 line
7483	AD-017	NM_018446.1	976	tcctctgctctatctatctatc	212048	600441	see also 7481 line
7484	LOC55831	NM_018447.1	686	atcctgtgactcctcactatg	371569	785469	-
7485	ARHGAP1	NM_018460.2	588	ttcctctacagtcagatattga	371832	771272	-
7486	ARHGAP1	NM_018460.2	974	gtggtttgaagcaatgcattg	371848	771284	see also 7485 line
7487	MDS027	NM_018462.3	185	agcccttgaacggagaatagagt	371877	749216	-
7488	MDS027	NM_018462.3	187	cccttgaaacggagaatagagac	371878	749217	see also 7487 line
7489	MDS027	NM_018462.3	194	acggagaatagagtaacattgaag	371879	749218	see also 7487 line
7490	C9orf46	NM_018465.1	352	gtctcgggaattcctcaaatatt	371888	724320	-
7491	C9orf46	NM_018465.1	354	ctcgggaattcctcaaatatttt	371889	724321	see also 7490 line
7492	ACTR10	NM_018477.1	265	aagaattatattcctactaaag	286251	531617	-
7493	ACTR10	NM_018477.1	275	ttcctacctaagaattcattcc	286252	531618	see also 7492 line
7494	ACTR10	NM_018477.1	463	ttctgacgcttggaaattaattct	286263	531626	see also 7492 line
7495	ASH1L	NM_018489.1	2485	agcacatgcgggtctccaaaagg	21630	455113	transcription regulat
7496	ASH1L	NM_018489.1	2636	aacgcgcatgccaagaattgagc	21640	455125	or
7497	ASH1L	NM_018489.1	3614	ttcttcacactaatatttgcct	21664	455155	see also 7495 line
7498	ASH1L	NM_018489.1	3729	cagacagggcagctgatttcaga	21668	455159	see also 7495 line
7499	ASH1L	NM_018489.1	5720	aacgcacagctcggaaaattgic	21719	455217	see also 7495 line
7500	ASH1L	NM_018489.1	5726	aagctcggaaaattgcaattac	21720	455218	see also 7495 line
7501	ASH1L	NM_018489.1	5727	agctcggaaaattgcaattacg	21721	455219	see also 7495 line
7502	ASH1L	NM_018489.1	6480	ttggcagtggaacacacaaatcagc	21741	455231	see also 7495 line
7503	ASH1L	NM_018489.1	8457	tgccttggctcaccattatttc	21798	455280	see also 7495 line
7504	ASH1L	NM_018489.1	8655	ctgtgattatcggctgacaaagt	21812	455283	see also 7495 line
7505	ASH1L	NM_018489.1	8792	acgtcccagacacaaactacaagg	21813	455289	see also 7495 line
7506	FLJ22054	NM_018527.2	1343	tgttagtactccaactctaattg	387276	719460	-
7507	FLJ22054	NM_018527.2	1346	tagtactccaactctaattgaaat	387277	719461	see also 7506 line
7508	HS27784	NM_018553.1	216	ttcatggagcgaagatattcatt	372190	719237	-
7509	HS27784	NM_018553.1	290	acgttggcttgacgtcgctataaa	372191	719239	see also 7508 line
7510	HS27784	NM_018553.1	294	tggctgaagctgtagtaaacatc	372192	719240	see also 7508 line
7511	HS27784	NM_018553.1	794	tacgcagcgggttaggaaaaaga	372204	719249	see also 7508 line
7512	LRP1B	NM_018557.1	2635	ctgtgaacacctgctgctttaga	31100	549537	receptor activity
7513	LRP1B	NM_018557.1	6176	cagttgtctatcatagactat	31223	549627	see also 7512 line
7514	LRP1B	NM_018557.1	6953	gcctgatacaaccaagatctata	31254	549653	see also 7512 line
7515	LRP1B	NM_018557.1	6955	ctggatacaaccaagatctatagc	31255	549654	see also 7512 line
7516	LRP1B	NM_018557.1	10497	acctatggcactaacaaatagatt	31361	549755	see also 7512 line
7517	LRP1B	NM_018557.1	10501	atggcactaacaaatagattatgt	31362	549756	see also 7512 line

7518	LRP1B	NM_018557.1	10503	ggcactaacatagattatgta	31363	549757	see also 7512 line		
7519	LRP1B	NM_018557.1	10587	tagacacaaagccctaataaag	31367	549763	see also 7512 line		
7520	LRP1B	NM_018557.1	11287	gactattccagtgtaagactac	31386	549794	see also 7512 line		
7521	LRP1B	NM_018557.1	13945	tgcacactatttgtgaattc	31468	549875	see also 7512 line		
7522	LRP1B	NM_018557.1	14018	cgcctatgaaggaccacaaatgt	31473	549877	see also 7512 line		
7523	LRP1B	NM_018557.1	14584	ccggccatctactaaactga	31485	549903	see also 7512 line		
7524	GABRQ	NM_018558.1	1171	acgtgcaggatggcctgattaac	178839	572071	receptor activity, channel, signal transduction	neurotransmitter transporter	-
7525	MGC20741	NM_018561.3	1570	ctcagtcaggtcacatgtatctc	188585	582172	-	-	-
7526	MGC20741	NM_018561.3	1581	cacatgtatatcatgcaattaca	188586	582174	see also 7525 line		
7527	ALS2CR2	NM_018571.4	879	ttgaactatctgcacacaaatgg	72016	493781	kinase related	-	-
7528	GALNACT	NM_018590.3	822	ctcactcgccatctctgaagaaa	218692	741612	-	-	-
7529	GALNACT	NM_018590.3	1091	ccctttggacctctcatgaaag	218696	741621	see also 7528 line		
7530	GALNACT	NM_018590.3	1096	ttggacctctcatgaaagtgaag	218697	741622	see also 7528 line		
7531	DNAJA4	NM_018602.2	361	cccgatgatggcgagagattta	299353	668426	-	-	-
7532	DNAJA4	NM_018602.2	626	ttggccctccagcaaaaatgtaatt	299360	668432	see also 7531 line		
7533	DNAJA4	NM_018602.2	627	tggccctccagcaaaaatgtaatt	299361	668433	see also 7531 line		
7534	CHST12	NM_018641.2	1327	ctctacgaggcgactttgttct	218575	606518	-	-	-
7535	NOLA3	NM_018648.2	227	caccgaatcaccatcaagaacag	282604	716199	-	-	-
7536	MARK1	NM_018650.2	2804	agcgaatatctgggacatctatt	90231	507936	kinase related	-	-
7537	MARK1	NM_018650.2	2805	gcgaatatctgggacatctattg	90232	507937	see also 7536 line		
7538	MYNN	NM_018657.2	1578	tcctcaggagagctcaacaaaca	7311	537836	transcription regulat	-	-
7539	SMPD3	NM_018667.1	1448	tggctgattccgaaatctacc	199000	591016	or	-	-
7540	VPS33B	NM_018668.2	837	ggatcagcgttggatcaacact	271391	652966	-	-	-
7541	VPS33B	NM_018668.2	1153	ggcctgaaggtctactcaatg	271394	652971	see also 7540 line		
7542	VPS33B	NM_018668.2	1769	gccagagagagcaattttcgtgc	271409	652990	see also 7540 line		
7543	VPS33B	NM_018668.2	1786	tcgtgccatcagcaaaaagctga	271410	652991	see also 7540 line		
7544	ABCA5	NM_018672.2	1257	gaccagaaacctctactgaaga	68951	490941	-	-	-
7545	ABCA5	NM_018672.2	1623	gtcctatgaactctgttttttc	68964	490955	see also 7544 line		
7546	ABCA5	NM_018672.2	4132	ttcaacagctactatggtttattc	69044	491029	see also 7544 line		
7547	ABCA5	NM_018672.2	5765	cagtaacacatctaaagagtaaa	69091	491078	see also 7544 line		
7548	ACCN4	NM_018674.3	983	tactcgtatgggaagtgtaca	262538	645992	channel	-	-
7549	ACCN4	NM_018674.3	1419	gagaccatctgccaccacaaatat	262544	645997	see also 7548 line		
7550	ACAS2	NM_018677.2	625	ggcctttgcaactccatgtgttt	108108	617417	-	-	-
7551	ACAS2	NM_018677.2	1154	ttgatcaactgctcaatctaacg	108113	617426	see also 7550 line		
7552	ACAS2	NM_018677.2	1564	ctctcgaatcctgaatgagtc	108116	617433	see also 7550 line		
7553	ACAS2	NM_018677.2	1644	gggatcatcgccacagctctatgg	108118	617435	see also 7550 line		
7554	ZNF313	NM_018683.3	308	gccatggtcgcgtgaagaatttc	372534	742521	-	-	-
7555	ANLN	NM_018685.2	889	cagcctggaccgctgtttatc	115227	734481	-	-	-

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7556	ANLN	NM_018685.2	890	agcctgtaccgtctgttttatcc	115228	734482	see also 7555 line
7557	ANLN	NM_018685.2	893	ctgtaccgtctgtttatcaaaa	115229	734483	see also 7555 line
7558	ANLN	NM_018685.2	1330	cgtttggagagcgtgtcaaga	115245	734491	see also 7555 line
7559	ANLN	NM_018685.2	3280	aagaatcccataggaagataaa	115296	734555	see also 7555 line
7560	ANLN	NM_018685.2	3381	tactgtccaccacaagaagaag	115299	734561	see also 7555 line
7561	CMAS	NM_018686.3	608	cagttcgtgagtgaaattca	208973	598636	-
7562	KIAA1199	NM_018689.1	865	tcattctgaccggttgacacc	372564	742430	-
7563	KIAA1199	NM_018689.1	2461	gggtgcatcatcatagacaac	372613	742443	see also 7562 line
7564	C5orf3	NM_018691.1	1291	aactcatatggctactcttg	111290	724190	-
7565	ELAC1	NM_018696.1	133	aggcgtgctgctcttctgact	372642	746223	-
7566	ELAC1	NM_018696.1	336	tagggcttgggactttatctgg	372649	746231	see also 7565 line
7567	ELAC1	NM_018696.1	1088	gtgacttagcagaagattttat	372656	746243	see also 7565 line
7568	LANCL2	NM_018697.2	1229	tggagtgtagcgtgtgattgg	372691	747739	-
7569	PRDM5	NM_018699.1	1048	gagatatttgatttcaagaatg	36883	689617	transcription_regulat or DNA binding
7570	PRDM5	NM_018699.1	1569	tcctatttggccagaaatttg	36901	689628	see also 7569 line
7571	DKFZp547A023	NM_018704.1	274	cacagagatacttcaattgaaga	372699	742004	-
7572	DKFZp762O076	NM_018710.1	321	atgaagctacgccaatcaaaaac	372755	733592	-
7573	DKFZp547C176	NM_018710.1	597	gcccacactgcacaaaaatctcc	372766	733599	see also 7572 line
7574	DKFZp547C176	NM_018712.2	855	tgcattgtggcgcacaaataaa	372801	798939	-
7575	COG1	NM_018714.1	576	agccacttcggtcaactatct	268370	650689	-
7576	A2BP1	NM_018723.2	1810	goggtcgaccogtgtacaaccc	49521	472987	-
7577	A2BP1	NM_018723.2	2090	taggagccatgctgtagtgagg	49525	473006	see also 7576 line
7578	A2BP1	NM_018723.2	2104	atgatgtgggtctgcttcttct	49526	472993	see also 7576 line
7579	A2BP1	NM_018723.2	2123	ttctcattgcaggctagtatat	49530	472995	see also 7576 line
7580	A2BP1	NM_018723.2	2126	ttcattgcaggctagtatatcc	49531	472996	see also 7576 line
7581	A2BP1	NM_018723.2	2151	ggggatatacaaccgtttgtctcc	49532	472997	see also 7576 line
7582	IL17RB	NM_018725.2	269	tggcagcatcgcgtgtgtgaagg	124304	635399	receptor activity
7583	MATR3	NM_018834.3	410	tgtacaccagctcttaagtatgc	52413	474004	transcription_regulat or structural molecule
7584	MATR3	NM_018834.3	461	tactgcacgcttgctagtgttaa	52414	474005	see also 7583 line
7585	MATR3	NM_018834.3	466	cacgcttgcctagttaattgaat	52416	474007	see also 7583 line
7586	MATR3	NM_018834.3	495	atgattcttcaattgaataca	52418	474010	see also 7583 line
7587	MATR3	NM_018834.3	534	ctgtcttctgctagtactcttc	52419	474011	see also 7583 line
7588	MATR3	NM_018834.3	554	ttccataatttgcagctctat	52420	474013	see also 7583 line
7589	MATR3	NM_018834.3	556	ccataatttgcagctctatatt	52422	474014	see also 7583 line
7590	MATR3	NM_018834.3	928	atggaagtcttctcaagaatct	52430	474028	see also 7583 line
7591	MATR3	NM_018834.3	947	atctggtattatgacagaatgg	52431	474030	see also 7583 line
7592	MATR3	NM_018834.3	1024	ttggtgagacctgcgaataact	52432	474033	see also 7583 line
7593	MATR3	NM_018834.3	1025	tggtagacctgcgaataactc	52433	474034	see also 7583 line

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7594	MATR3	NM_018834.3	1029	gagacctcgataactatcataa	52434	474035	see also 7583 line	
7595	MATR3	NM_018834.3	1031	gacctcgataactatcataaat	52435	474036	see also 7583 line	
7596	MATR3	NM_018834.3	1034	ctcgataactatcataatttg	52436	474038	see also 7583 line	
7597	MATR3	NM_018834.3	1129	gcgctctccaagtagcaatatt	52438	474041	see also 7583 line	
7598	MATR3	NM_018834.3	1130	cgctctcccaagtagcaatattg	52439	474042	see also 7583 line	
7599	MGFP	NM_018843.1	1283	ctgcttgccattatgacagt	180794	573610	-	-
7600	BCAP29	NM_018844.1	402	gacgtctggtaacgtcttattact	267921	650563	apoptosis	-
7601	SBB126	NM_018846.2	638	aagatgctgaacctgatattatt	135566	534174	-	-
7602	SBB126	NM_018846.2	642	tgctgaacctgatattatgaac	135567	534175	see also 7601 line	-
7603	MKS	NM_018848.2	2542	ctgtagagacagccaattgatt	91647	508452	-	diabetes(糖尿病)
7604	CACNA1G	NM_018896.3	4752	ccggtgggtccggcacaaagaca	138816	644860	channel	low voltage-gated calcium channel
7605	CACNA1G	NM_018896.3	4755	gtggtgctccggcacaaagacaact	138817	644861	see also 7604 line	-
7606	CACNA1G	NM_018896.3	5822	aggagtcacactgctacacacag	138823	644872	see also 7604 line	-
7607	NANS	NM_018946.2	767	aagggttggaacgtaacataac	209008	620631	-	-
7608	DAZAP1	NM_018959.2	647	cccgaggttttgagatttattact	50374	482716	-	-
7609	DAZAP1	NM_018959.2	692	accaggtgtaaacatgcatcttt	50375	482717	see also 7608 line	-
7610	C21orf107	NM_018963.3	724	tagaacaggaacatagaacttta	58358	487038	-	-
7611	SLC37A1	NM_018964.2	1347	agcgctgctccgattagattatc	259315	767752	sugar porter	-
7612	SLC37A1	NM_018964.2	1348	ggcctgctccgattaggtattacc	259316	767753	see also 7611 line	-
7613	SNTG1	NM_018971.1	1743	tacagtgcaagacctatgcatt	119056	523872	-	-
7614	SREB3	NM_018969.3	1173	ctgctactggcgaggttttga	241250	729855	gpcr、 receptor activity、 signal transduction	rhodopsin-like receptor
7615	GPR85	NM_018970.3	948	gcccataccgcttctatacaaa	240378	625261	-	-
7616	GPR85	NM_018970.3	949	cccatcacgcttctatacaaaag	240379	625262	see also 7615 line	-
7617	GPR85	NM_018970.3	952	atcacgcttctatacaaaagg	240380	625263	see also 7615 line	-
7618	GPR85	NM_018970.3	1179	gtctactcaagctgatatttt	240389	625269	see also 7615 line	-
7619	GPR85	NM_018970.3	1299	ggcaattggctagcaggtttgg	240393	625272	see also 7615 line	-
7620	GPR85	NM_018970.3	1667	aagggaaccttactgtgttat	240400	625279	see also 7615 line	-
7621	GDAP1	NM_018972.1	122	aagggtgctgttgtaattgctga	373896	700815	-	-
7622	GDAP1	NM_018972.1	893	gtcaacaataataatctctgc	373912	700837	see also 7621 line	-
7623	SLC38A2	NM_018976.3	835	tactcttcatagtgaaataga	11517	448505	-	-
7624	NLGN3	NM_018977.1	525	ccccgatacggcgagaaacgtttc	373930	622305	-	autism(自閉症)
7625	NLGN3	NM_018977.1	526	ccccgagcggcgagaaacgtttcc	373931	622306	see also 7624 line	-
7626	NLGN3	NM_018977.1	773	ggcgagacttagcggataatga	373934	622311	see also 7624 line	-
7627	NLGN3	NM_018977.1	2046	ttcacatcggcgtgaaacacaaag	373945	622322	see also 7624 line	-
7628	NLGN3	NM_018977.1	2136	tgcatacatgttcoactatcag	373949	622323	see also 7624 line	-
7629	NLGN3	NM_018977.1	2724	ttgcccgcagggttcaacagacc	373955	622334	see also 7624 line	-
7630	PRKWNK1	NM_018979.1	1656	gaccatgctaaagctatcaaaag	97694	814811	kinase related	-
7631	PRKWNK1	NM_018979.1	3388	gaccagtagtagaatgtcaatt	97722	814852	see also 7630 line	-
7632	PRKWNK1	NM_018979.1	3389	accgagtagtagaatgtcaatta	97723	814853	see also 7630 line	-
7633	PRKWNK1	NM_018979.1	3480	aacaattatgggaacaatgact	97728	814857	see also 7630 line	-

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7634	PRKWNK1	NM_018979.1	5831	gacgttttcaggtagcaactaca	97788	814936	see also 7630 line
7635	PRKWNK1	NM_018979.1	6134	atctaagtcacagccttagtaat	97800	814946	see also 7630 line
7636	ERdj5	NM_018981.1	604	tcctgataaaaccccggaataacc	264679	647652	-
7637	ERdj5	NM_018981.1	614	aaccocgaataaccccaatgcaca	264680	647653	see also 7636 line
7638	ERdj5	NM_018981.1	687	atctacgaaataagtagtcacaaa	264682	647656	see also 7636 line
7639	ERdj5	NM_018981.1	690	tacggaaaaagtagacaatat	264683	647657	see also 7636 line
7640	ERdj5	NM_018981.1	2260	ttgccaacagtcattcttttt	264745	647697	see also 7636 line
	DJ167A19.						
7641	1	NM_018982.3	1078	gocagctgttcgtgagataaac	374006	757251	-
7642	SEMA5B	NM_018987.1	837	gggaacctcagccggactattga	251401	637656	-
7643	SEMA5B	NM_018987.1	845	cagccggactatgagaagatca	251402	637658	see also 7642 line
7644	RIN2	NM_018993.2	754	ctgcgtcagctctgcctataaa	295222	735665	-
7645	RIN2	NM_018993.2	970	cggcaccocgcttattatagtct	295224	735669	see also 7644 line
7646	RIN2	NM_018993.2	972	gccaccgcgtattaatgtctcc	295225	735670	see also 7644 line
7647	RIN2	NM_018993.2	1029	ggcggagcatgccgagaacagtc	295226	735671	see also 7644 line
7648	RIN2	NM_018993.2	1717	atgaccacaggtcagaactatttt	295232	735677	see also 7644 line
7649	RIN2	NM_018993.2	1719	gaccacaggtcagaactatttgt	295233	735678	see also 7644 line
7650	RIN2	NM_018993.2	2132	tgccagctcgtgaactatgtcata	295236	735687	see also 7644 line
7651	FBXW5	NM_018998.2	1636	ctggacacggcactcaacatct	374103	705687	-
7652	FLJ20152	NM_019000.2	650	cagctctttgtctcaagattagc	374111	716564	-
7653	FLJ20152	NM_019000.2	677	cggttgctgcgaagagattatct	374114	716566	see also 7652 line
7654	FLJ20152	NM_019000.2	681	tgtgcgaagagtagtatcttgt	374115	716567	see also 7652 line
7655	ETAA16	NM_019002.2	614	ttgtgaaactgtctattccttgt	374290	725942	-
7656	FLJ20323	NM_019005.1	432	atgtctgagtgctacttacaagc	374362	755811	-
7657	FLJ20323	NM_019005.1	453	gocctgtcaagatcataactca	374364	755813	see also 7656 line
7658	FLJ20323	NM_019005.1	541	ctggaaatccactggatagtaact	374369	755819	see also 7656 line
7659	FLJ20323	NM_019005.1	625	cagcaaatataactccttgatag	374376	755822	see also 7656 line
7660	FLJ20323	NM_019005.1	1832	aggagatctgaatctctaatgtgg	374422	755834	see also 7656 line
7661	PEPP2	NM_019012.2	2409	tccagattatagactctacaaga	172704	755048	-
7662	PEPP2	NM_019012.2	2411	cagattatagactctacaagagt	172705	755049	see also 7661 line
7663	FLJ20793	NM_019022.3	1302	cagtataatgtctatggaatct	137581	812616	-
							S-adenosylmethionin e-dependent methyltransferase
7664	FLJ10640	NM_019023.1	1215	ctggatgcagtggtgtacttcc	214193	604403	-
7665	SMOX	NM_019025.2	575	atggcgtggcctgctactacc	225896	612664	-
7666	SMOX	NM_019025.2	632	aggaaatcagcattataaac	225897	612666	see also 7665 line
7667	HIP14L	NM_019028.1	686	gggcagaaacaaactgatttct	374538	731956	kinase-related
7668	HIP14L	NM_019028.1	861	ctcttgatggctctacaaaac	374545	731963	see also 7667 line
7669	PCDH18	NM_019035.2	2896	atgcttcacacggggcaatatca	149850	551281	-
7670	DDX4	NM_019039.1	637	aacgaggtgttacaagaattta	59141	483078	-
7671	DDX4	NM_019039.1	638	acggaggtgttacaagaatttaa	59142	483079	see also 7670 line
7672	DDX4	NM_019039.1	640	gaggtgttacaagaagtttaaat	59143	483080	see also 7670 line
7673	ELP4	NM_019040.2	1019	aaccatttgtataaggattatca	374610	714656	-

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7674	ELP4	NM_019040.2	1021	ccattgtataaggattatcatg	374611	714657	see also 7673 line
7675	ELP4	NM_019040.2	1065	ttctcgtgcttaataacttgatc	374615	714659	see also 7673 line
7676	APBB1P	NM_019043.2	1343	atggagaagactctctatgataac	314871	679185	signal_transduction
7677	SEC15L1	NM_019053.2	1002	cagttgatgctctatagaagatat	269943	650055	-
7678	SEC15L1	NM_019053.2	1018	aagatatctcaactcaaatgttag	269945	650057	see also 7677 line
7679	SEC15L1	NM_019053.2	1118	aacatggccctctcaagataaat	269948	650060	see also 7677 line
7680	SEC15L1	NM_019053.2	1121	atggccctctcaagataatgac	269949	650061	see also 7677 line
7681	SEC15L1	NM_019053.2	1715	gaggactttataactaacattac	269969	650078	see also 7677 line
7682	SEC15L1	NM_019053.2	2039	atgtaactgacagatgagtgtaaa	269972	650087	see also 7677 line
7683	SEC15L1	NM_019053.2	2193	tccttgacctttttgtgtttgg	269977	650093	see also 7677 line
7684	ROBO4	NM_019055.4	1565	tgggcccaggtctgtacagatat	374788	736108	receptor_activity
7685	PIP3AP	NM_019061.2	1569	ttgtcagatagacctgtatatacc	374834	781673	-
7686	PIP3AP	NM_019061.2	1618	cacctcatcaaaaagatactaac	374836	781676	see also 7685 line
7687	ING3	NM_019071.2	231	cagaatgcaatgcatcaactaga	28855	460590	transcription_regulat
7688	ING3	NM_019071.2	492	gagagcgcatctttggaattaga	28865	460602	or
7689	ING3	NM_019071.2	494	gaggcgatctttggaattagaca	28866	460603	see also 7687 line
7690	ING3	NM_019071.2	1190	ttggaacttacgacccaaatgaac	28884	460628	see also 7687 line
7691	ING3	NM_019071.2	1191	tggacttaacgacccaaatgaacc	28885	460629	see also 7687 line
7692	ING3	NM_019071.2	1251	atgtgtgagtgatgataccaaga	28889	460632	see also 7687 line
7693	SGTB	NM_019072.1	813	ttgacatgctgactgttgataaat	374917	754195	-
7694	SPATA6	NM_019073.1	528	ttcaaacgccaggttaccatga	374933	725279	-
7695	SPATA6	NM_019073.1	539	aggttaacatgagggagatttct	374934	725280	see also 7694 line
7696	SPATA6	NM_019073.1	1297	gagatccatgacccgggttaaaaa	374962	725310	see also 7694 line
7697	SPATA6	NM_019073.1	1564	gacagatgtacaggaacttata	374966	725317	see also 7694 line
7698	FLJ20051	NM_019087.1	118	ggcgtttctgtacatggattatc	375116	776172	-
7699	FLJ20051	NM_019087.1	275	gtgtcgaccacaggttttagtat	375120	776176	see also 7698 line
7700	FLJ20051	NM_019087.1	538	agctcgctcagtaacagagatca	375130	776187	see also 7698 line
7701	FLJ20051	NM_019087.1	541	tcgctcagtaacagagatacaaaa	375131	776188	see also 7698 line
7702	PD2	NM_019088.1	320	gccgagtaagtaactgcaatagc	375134	708190	-
7703	C20orf155	NM_019095.3	713	tgttaggttaaaacaaacattca	218398	671407	-
7704	CNGB3	NM_019098.2	1243	ttgggcagttcgaaactttaatta	247944	520793	-
7705	CNGB3	NM_019098.2	1244	tgggcagttcgaaactttaattac	247945	520794	see also 7704 line
7706	CNGB3	NM_019098.2	1245	gggcagttcgaaactttaattacc	247946	520795	see also 7704 line
7707	APOM	NM_019101.2	497	cagcgctttctctctacaatcg	271910	654558	lipid transporter
7708	HOXA5	NM_019102.2	108	gcccggactaccagttgcatat	5068	444714	transcription_regulat
7709	HOXA5	NM_019102.2	109	cccggactaccagttgcatat	5069	444715	or
7710	TNXB	NM_019105.4	13010	cggatgaccttcacggaaatgaag	42442	570944	see also 7708 line
7711	KLHL4	NM_019117.3	1051	tcctgttcacagtaatagaatt	117847	532899	-
7712	KLHL4	NM_019117.3	1095	gacataatgtccctgatgaaga	117848	532903	see also 7711 line
7713	LOC56181	NM_019557.3	756	atgcaggttcggcttcataacg	375314	740453	-
7714	LOC56181	NM_019557.3	1018	cagcagctttgcagacatgatgg	375320	740457	see also 7713 line



7715	DKFZP761	NM_019590.1	574	tacagaaatgagggtttctatgc	375329	800485	-	-
7716	L0424	NM_019590.1	999	aggattatccagcctttagaac	375347	800502	see also 7715 line	-
7717	RNF20	NM_019592.5	406	atcatcttaaacgttatgtatct	375382	807729	-	-
7718	RNF20	NM_019592.5	910	ctgcagtgaggatattgacaaat	375390	807736	see also 7717 line	-
7719	RNF20	NM_019592.5	2402	atcagatccataagttgcttaaa	375422	807761	see also 7717 line	-
7720	RNF20	NM_019592.5	2859	gtctgtacatgcgttaaaaaagg	375426	807768	see also 7717 line	-
7721	KIAA1434	NM_019593.2	2193	gttgatgcacaacggcattgataa	198901	590920	-	-
7722	KIAA1434	NM_019593.2	2194	tggatgccaacggcattgataac	198902	590921	see also 7721 line	-
7723	LOC56270	NM_019613.2	812	ttcatcaggcgcatatcatcagg	375526	718920	-	-
7724	PAR3	NM_019619.2	113	tcgccaaggatccaaactactgg	308266	538486	cell_cycle, kinase_related	-
7725	PAR3	NM_019619.2	2514	tgccagtcgaattggatttcgtta	308326	538537	see also 7724 line	-
7726	PAR3	NM_019619.2	2515	gccagtcgaattggatttcgttaa	308327	538538	see also 7724 line	-
7727	PAR3	NM_019619.2	2517	cagtcgaattggatttcgttaaaa	308328	538539	see also 7724 line	-
7728	PAR3	NM_019619.2	2530	ttcgttaaacacgaaaaatcaaa	308330	538540	see also 7724 line	-
7729	PAR3	NM_019619.2	2571	agctgacgagactaaactcaata	308334	538542	see also 7724 line	-
7730	PAR3	NM_019619.2	2573	ctgcagagactaaactcaataca	308335	538543	see also 7724 line	-
7731	PAR3	NM_019619.2	2575	gcagagactaaactcaatacagt	308336	538544	see also 7724 line	-
7732	ABCB9	NM_019624.1	1240	cacggagctgaggtcttcctagt	69952	492021	-	-
7733	EIF4ENIF1	NM_019843.2	1003	atgcttgcttcgtagatagaag	269024	476720	protein transporter	-
7734	EIF4ENIF1	NM_019843.2	1004	tgcttggcttcgtagatagaaga	269025	476721	see also 7733 line	-
7735	EIF4ENIF1	NM_019843.2	1007	ttgcttcgtagatagaagaagt	269026	476722	see also 7733 line	-
7736	EIF4ENIF1	NM_019843.2	1009	ggcttcgtagatagaagaagttt	269027	476723	see also 7733 line	-
7737	EIF4ENIF1	NM_019843.2	1177	tggacagaactcggggaattact	269028	476726	see also 7733 line	-
7738	MEITL3	NM_019852.2	1134	agccaggagctgctcttacaca	52520	474143	-	-
7739	MEITL3	NM_019852.2	1603	aggttcttcaccacagtcataaa	52524	474156	see also 7738 line	-
7740	CTPS2	NM_019857.3	615	gtccaggagtgaggtagaatca	232111	617034	-	-
7741	CTPS2	NM_019857.3	1191	tgctagcctctgtgtcaaacg	232130	617049	see also 7740 line	-
7742	GRCA	NM_019858.1	1354	cagcgccatagttttctctatg	240437	625334	gpcr, receptor_activity, signal_transduction	-
7743	GRCA	NM_019858.1	1355	agcgccatgctttctctatga	240438	625335	see also 7742 line	-
7744	CHST7	NM_019886.2	543	agcaccggagcgtttctacttg	217395	605599	-	-
7745	CHST7	NM_019886.2	546	accggagcgtttctacttgat	217396	605600	see also 7744 line	-
7746	CHST7	NM_019886.2	547	cccgagcgtttctacttgatg	217397	605601	see also 7744 line	-
7747	ERO1LB	NM_019891.2	402	gagactatttctgtattacaag	226687	722219	-	-
7748	ERO1LB	NM_019891.2	824	ttcaagctcgatctgtttatog	226706	722229	see also 7747 line	-
7749	ERO1LB	NM_019891.2	827	aagctcgatctgtttatctgoc	226707	722230	see also 7747 line	-
7750	ERO1LB	NM_019891.2	835	atctgtttatctgtctttaaatc	226708	722231	see also 7747 line	-
7751	ASAH2	NM_019893.1	45	cagtgaggacattgaaaccaca	303836	593825	signal_transduction	-
7752	C3orf4	NM_019895.1	1590	ctcacacacacgggaagagatc	326213	691313	-	-
7753	C3orf4	NM_019895.1	1599	accggaaagggtacaccttaatg	326214	691314	see also 7752 line	-

Alzheimer disease(アルツハイマー病)

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7754	C3orf4	NM_019895.1	1600	cggaaagagtagcaccttaataga	326215	691315	see also 7752 line		
7755	KCMF1	NM_020122.2	434	agcccttagagatttagatgaat	375588	709050	channel	-	
7756	KCMF1	NM_020122.2	456	togagtgtgttcgacatgtacg	375589	709053	see also 7755 line		
7757	KCMF1	NM_020122.2	466	ttcacatgaatcagaatgttt	375590	709054	see also 7755 line		
7758	SMBP	NM_020123.2	305	gagcagcaacacacgtatcaaga	274828	655211	-	-	
7759	SMBP	NM_020123.2	309	acgaacacacgtatcaagataaa	274829	655213	see also 7758 line		
7760	SMBP	NM_020123.2	417	tggagtcacacacacacgtatcagt	274838	655216	see also 7758 line		
7761	SMBP	NM_020123.2	715	tggaaatcgaattgttgatgta	274848	655234	see also 7758 line		
7762	SMBP	NM_020123.2	1404	tggcgtttgtgcatgtgttt	274858	655256	see also 7758 line		
7763	SMBP	NM_020123.2	1594	ttcaatcttattgaatgtatt	274866	655267	see also 7758 line		
7764	EB-1	NM_020140.1	472	ttgtggaaattggaatccttaa	375842	805544	-	-	
7765	LOC56902	NM_020143.2	371	gggacttcagatagcgtttaact	63572	478404	-	-	
7766	SH3GLB2	NM_020145.2	723	caggagactagacctcgttaatta	375680	752972	-	-	
7767	SH3GLB2	NM_020145.2	724	aggagactagacctcgttaatac	375681	752973	see also 7766 line		
7768	SH3GLB2	NM_020145.2	728	gactagacctcgttaatacttc	375682	752974	see also 7766 line		
7769	STAR7	NM_020151.2	879	accagtagcaggttttggaaacc	375705	753039	-	-	
7770	STAR7	NM_020151.2	1482	ctgctcgagtagtagatctga	375724	753054	see also 7769 line		
7771	FLJ21827	NM_020153.2	1134	caggcccatgcccagacattgaca	280327	714495	-	-	
7772	LOC56851	NM_020154.1	367	ggagcaagatatgtgaattaca	111317	747840	-	-	
7773	DHX33	NM_020162.2	1037	ggctatcgcaaaagtgcatttt	59771	483565	-	-	
7774	DHX33	NM_020162.2	1038	ggctatcgcaaaagtgcatttt	59772	483566	see also 7773 line		
7775	DHX33	NM_020162.2	1042	atcgcaagtagtgcatttcaacc	59773	483567	see also 7773 line		
7776	DHX33	NM_020162.2	1072	ctgaaacctcacaaccattaca	59774	483568	see also 7773 line		
7777	DHX33	NM_020162.2	1122	atggttaaaagcaagaagtataa	59775	483573	see also 7773 line		
7778	MCCG1	NM_020166.2	279	taccaaggtcctcattgcaaaa	90434	508077	methylecrotonyl-CoA carboxylase	methylecrotonylglycinuria(メチルクロトニルグリシン尿症)	
7779	MCCG1	NM_020166.2	995	agggccacagcgcctgtattataa	90452	508097	see also 7778 line		
7780	MCCG1	NM_020166.2	996	agggccacagcgcctgtattataa	90453	508098	see also 7778 line		
7781	FEM1C	NM_020177.2	885	ctgtcaacacacacagactttaacc	375761	783609	-	-	
7782	FEM1C	NM_020177.2	1138	tggaggttgggacatcatgaaga	375773	783618	see also 7781 line		
7783	FEM1C	NM_020177.2	1280	agcaagacagacacgtatataatgc	375778	783623	see also 7781 line		
7784	FEM1C	NM_020177.2	1827	tagcgcagctatcaacaaact	375802	783653	see also 7781 line		
7785	FEM1C	NM_020177.2	1829	gagcgcagctatcaacaaactca	375803	783654	see also 7781 line		
7786	FEM1C	NM_020177.2	2028	ctgtggacaagaatactacatgt	375813	783660	see also 7781 line		
7787	FEM1C	NM_020177.2	2030	gtggacaagaatactacatgtgt	375814	783661	see also 7781 line		
7788	BRUNOL4	NM_020180.1	735	tggccagatgggcatgttcaacc	49810	471162	-	-	
7789	CNNM4	NM_020184.1	845	gccaggagattgcactgtttac	375844	744478	-	-	
7790	DUSP22	NM_020185.3	732	tggtagtcgcatcatcatgacc	195866	534955	kinase-related, phosphatase, apoptosis	-	
7791	MRPS22	NM_020191.2	366	gaggcagcctaagtagcattataa	282299	658747	structural constituent of ribosome	-	
7792	MRPS22	NM_020191.2	367	aggcagcctaagtagcattataa	282300	658748	see also 7791 line		

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7793	MRPS22	NM_020191.2	368	ggcagcctaaagtagcagctaaataa	282301	658749	see also 7791 line	
7794	C11orf30	NM_020193.2	214	aacgatgaacggtaatacaacaat	375949	772286	-	-
7795	C11orf30	NM_020193.2	819	aacaacacagaaggtattatag	375963	772294	see also 7794 line	
7796	C11orf30	NM_020193.2	1427	ctctaccaccagtagcaattcc	375980	772305	see also 7794 line	
7797	C11orf30	NM_020193.2	1456	atggtgtagtagcagtaagtgc	375983	772307	see also 7794 line	
7798	C11orf30	NM_020193.2	1472	atggtgcaattatgaactaaa	375984	772309	see also 7794 line	
7799	C11orf30	NM_020193.2	1699	atcactacaatccaatgacttc	375989	772325	see also 7794 line	
7800	GL004	NM_020194.4	349	cagaattagtagaattcagtag	376039	738905	-	-
7801	GL004	NM_020194.4	941	tggcattttgcgtatccagt	376055	738919	see also 7800 line	
7802	RNPEP	NM_020216.3	706	tccctctatctgtagctttg	159827	559531	-	zinc binding
7803	RNPEP	NM_020216.3	900	atgccacgcctcttccatttgg	159831	559538	see also 7802 line	
7804	RNPEP	NM_020216.3	1446	atcattccaggtttgatttga	159845	559549	see also 7802 line	
7805	RNPEP	NM_020216.3	1517	ccctgggagctcactcatgaagc	159846	559550	see also 7802 line	
7806	PRDM8	NM_020226.1	1713	caigccaacgtttccagttgagt	376266	741090	-	-
7807	PRDM8	NM_020226.1	1715	gccaaagttccagttgagttc	376267	741091	see also 7806 line	
7808	MDS010	NM_020231.3	210	aaccatgtcaagtcacaaactgc	376310	772580	-	-
7809	MDS010	NM_020231.3	509	gtcttctctcagtaagacatc	376321	772590	see also 7808 line	
7810	BBX	NM_020235.2	639	aaccaggtgctaccagaatact	22512	456064	-	-
7811	BBX	NM_020235.2	1553	ttctgccagtagcaagaataaa	22525	456079	see also 7810 line	
7812	BBX	NM_020235.2	1556	tgcagtagcaagataataatta	22526	456081	see also 7810 line	
7813	BBX	NM_020235.2	2255	aggaactctctgcatcatgaag	22544	456096	see also 7810 line	
7814	BBX	NM_020235.2	2774	tactttggatgacaaaccaaagg	22555	456110	see also 7810 line	
7815	BBX	NM_020235.2	3017	gccgaggtcctctgactattt	22557	456112	see also 7810 line	
7816	BBX	NM_020235.2	3019	cgcaggtcctgactatttcc	22558	456114	see also 7810 line	
7817	KNSL7	NM_020242.1	3564	aagatggaagagccctcgaagct	30102	506346	-	-
7818	CHPT1	NM_020244.1	800	aacaatgtggagctatcagattc	209533	671434	-	-
7819	CHPT1	NM_020244.1	1073	tggatgtcttctgctaaagtct	209543	671451	see also 7818 line	
7820	TULP4	NM_020245.2	2317	ggatgccatggtcaagttctaca	13787	682180	transcription_regulat or	transcription factor
7821	TULP4	NM_020245.2	3211	aaccaactcgtgtagtaact	13799	682204	see also 7820 line	
7822	TULP4	NM_020245.2	3215	aacctcgttgtagtaactataa	13800	682205	see also 7820 line	
7823	TULP4	NM_020245.2	3216	aactcgttgtagtaactataaa	13801	682206	see also 7820 line	
7824	TULP4	NM_020245.2	5879	atgcaggttggcaggttagtg	13818	682236	see also 7820 line	
7825	CCNL1	NM_020307.1	512	tccaccactccgccagtaaga	23760	674728	-	-
7826	CCNL1	NM_020307.1	514	caccacctccgccagtaaga	23761	674729	see also 7825 line	
7827	CCNL1	NM_020307.1	630	gggattttgtgtcagtgaagc	23766	674735	see also 7825 line	
7828	CCNL1	NM_020307.1	1174	agcccttacaatggtgaagaa	23777	674749	see also 7825 line	
7829	CCNL1	NM_020307.1	1359	aagcctctgaagacatcaatc	23779	674753	see also 7825 line	
7830	CCNL1	NM_020307.1	1553	aacgatctgctccttggagagg	23780	674757	see also 7825 line	
7831	CMKOR1	NM_020311.1	1145	ttcaagtactcggccaaaacagg	239124	624012	gpcr, receptor_activity, signal_transduction	-
7832	DFZP564 O043	NM_020319.1	608	tcctcgagagagagctggtatt	376516	759551	-	-

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7833	DKFZP564	NM_020319.1	617	gagactggattattacactaagc	376517	759555	see also 7832 line	
7834	RAI17	NM_020338.1	1040	aggcgtataacagccaattcatg	159506	809155	-	-
7835	RAI17	NM_020338.1	1041	ggcgtataacagccaattcatga	159507	809156	see also 7834 line	-
7836	PAK7	NM_020341.2	2151	gacaagcagatggccggataaagt	95565	511171	kinase_related	-
7837	PAK7	NM_020341.2	2154	aagcgatggccggataaagtgt	95566	511172	see also 7836 line	-
7838	PAK7	NM_020341.2	2379	gcggagatccggagacagtttac	95576	511177	see also 7836 line	-
7839	PAK7	NM_020341.2	2380	cggaggatccggagacagtttacc	95577	511178	see also 7836 line	-
7840	PAK7	NM_020341.2	2406	aagagtgaaggaacctacacaagg	95578	511180	see also 7836 line	-
7841	PAK7	NM_020341.2	2414	aggacctacacaaggtttcttca	95579	511181	see also 7836 line	-
7842	SLC24A2	NM_020344.1	1144	ttggatcatatggaaaaactaaaa	257800	693107	synporter	-
7843	PLSCR4	NM_020353.1	307	aggcttgcctatgggatactaca	151342	803285	phospholipid scramblase	-
7844	LALP1	NM_020354.1	920	gggaggagcctctctccaaattg	376839	585973	-	-
7845	LALP1	NM_020354.1	1051	acgtgtacagggtttatgtocaa	376841	585974	see also 7844 line	-
7846	LALP1	NM_020354.1	1463	tgccaaggctgtcaggattact	376852	585982	see also 7844 line	-
7847	HT014	NM_020362.2	307	cggaccgaccgtctcgaagtttgt	376893	716210	-	-
7848	HT014	NM_020362.2	310	accgacctccaaagtttgtga	376894	716212	see also 7847 line	-
7849	RPGRIP1	NM_020366.2	791	cagagcttcgagctccattaaa	376913	540009	-	-
7850	C12orf6	NM_020367.2	319	tagcagtggaagatcgaataaaa	376982	805719	-	-
7851	C12orf6	NM_020367.2	382	ttccaaattcagctacaagatag	376984	805721	see also 7850 line	-
7852	C12orf6	NM_020367.2	1044	aagcagcagagctatgtgaattta	377009	805744	see also 7850 line	-
7853	FSCN3	NM_020369.1	1517	gggagctctcttggtcaataaca	114134	523031	-	-
7854	C12orf4	NM_020374.2	1077	tactagataataatcgaattaat	377121	751857	actin cross-linking	-
7855	C12orf4	NM_020374.2	1080	tagtagataatcgaattaatca	377122	751858	see also 7854 line	-
7856	CYSLTR2	NM_020377.2	275	ttcccttcaggcgtgactattat	238937	623062	receptor_activity、 signal_transduction、 gpcr	leukotriene receptor
7857	CYSLTR2	NM_020377.2	277	cccttcaggcgtgactattatct	238938	623064	see also 7856 line	-
7858	CYSLTR2	NM_020377.2	469	tggatctctgtggagatcatatg	238947	623070	see also 7856 line	-
7859	XPNIPEP1	NM_020383.2	831	gagacgatcatgctctctcattga	186679	580496	-	-
7860	XPNIPEP1	NM_020383.2	833	gacgatcatgctctctcattgatg	186680	580497	see also 7859 line	-
7861	TRPC7	NM_020389.1	994	ttgcttaacatgtggtatgaaaa	252170	645608	receptor_activity、 channel	calcium channel
7862	EIF5A2	NM_020390.5	132	tggcagacgaataattgatttaact	56830	476778	-	-
7863	EIF5A2	NM_020390.5	362	aacatgatgttccaaatatttaa	56840	476785	see also 7862 line	-
7864	GOPC	NM_020399.1	1287	ctgtgtctgatttgcaagacaca	316129	535701	-	-
7865	PLXDC1	NM_020405.3	525	tgcggcagatcaccatagaaact	250548	636819	receptor_activity	-
7866	CGI-152	NM_020410.1	1450	ctgacccaagaatgagaaagtatt	76819	498119	-	plasma membrane cation-transporting ATPase
7867	DDX24	NM_020414.3	1649	ctgtcgaatccttcataagaag	50732	473533	-	ATP dependent RNA helicase

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7868	PPP2R2C	NM_020416.2	66	cacggagcacgcgggaaataaacc	298721	666280	phosphatase, signal transduction	-
7869	PPP2R2C	NM_020416.2	902	ccgtgtccgcgtgaagtccagc	298737	666284	see also 7868 line	-
7870	PAGE-1	NM_020423.4	1400	gaggagacacgaacacgaatcttc	95427	488149	kinase related	-
7871	SMURF1	NM_020429.1	2103	agggttatgagaggaatcgaagc	230798	615146	signal transduction	-
7872	PHTF2	NM_020432.2	522	ttgctgcaatgattattctgc	265697	782140	-	-
7873	PHTF2	NM_020432.2	1220	tgcagctctcgtgtccaagtc	265711	782153	see also 7872 line	-
7874	PHTF2	NM_020432.2	1435	tagttccaccacgagtaggaaa	265713	782160	see also 7872 line	-
7875	SALL4	NM_020436.2	559	ccccaggacataagctatttag	38882	649639	transcription_regulat	-
7876	DOLPP1	NM_020438.2	79	gacctcaccacgcgtcgaatc	377463	710341	or	-
7877	NAV1	NM_020443.2	638	cacgagctcagagaaaaagctgc	94162	520914	-	-
7878	NAV1	NM_020443.2	4864	gtcagagtgctcaataacatca	94206	520959	see also 7877 line	-
7879	KIAA1387	NM_020463.1	794	acctatcgttaggaaaaagctgg	377690	750287	-	-
7880	KIAA1387	NM_020463.1	1466	cagatcagctgtcacagatat	377702	750302	see also 7879 line	-
7881	KIAA1387	NM_020463.1	1642	tgggacttctgtactactaat	377707	750306	see also 7879 line	-
7882	KIAA1387	NM_020463.1	1643	eggacttctgtactactaatg	377708	750307	see also 7879 line	-
7883	KIAA1387	NM_020463.1	2153	accatctatttgtagtaaca	377720	750333	see also 7879 line	-
7884	GALNT1	NM_020474.2	1189	agggttacaaaggtagattatg	161844	561416	transferase, transferring glycosyl groups	-
7885	GALNT1	NM_020474.2	1199	aaggtagattatggagatatc	161845	561417	see also 7884 line	-
7886	PBXIP1	NM_020524.2	631	tgggcatctccctcaacatgtgc	113167	694768	transcription_regulat	-
7887	EPHA8	NM_020526.2	831	gggacacacccaaagatgtactgc	81647	501985	receptor activity, kinase related, ephrin receptor	-
7888	EPHA8	NM_020526.2	2229	ggcgctggcaatgattgtgact	81653	501995	signal transduction	-
7889	PCBP3	NM_020528.1	791	agggtggcagggcctcacacatcc	34579	463428	see also 7887 line	-
7890	PCBP3	NM_020528.1	911	cgccttcccgaggagaaagctgc	34581	463429	RNA binding	-
7891	RTN4	NM_020532.3	1824	cagattatgtcacacagataat	135437	540131	see also 7889 line	-
7892	CSR2BP	NM_020536.2	2404	ctctcgatottgaaaccttata	215054	602362	apoptosis	-
7893	CSR2BP	NM_020536.2	2406	ctcgatcttgaaccttatatc	215055	602363	see also 7892 line	-
7894	CSR2BP	NM_020536.2	2419	accttatcaggcgtgattatg	215057	602364	see also 7892 line	-
7895	ADCY2	NM_020546.1	1117	tccttaaccatgccaaagactgt	164830	618410	guanylate cyclase	-
7896	ADCY2	NM_020546.1	1327	tcctgacagtgtcaactttc	164833	618418	see also 7895 line	-
7897	ADCY2	NM_020546.1	1669	ttcaaaatcgacaccttaagaacc	164840	618433	see also 7895 line	-
7898	ADCY2	NM_020546.1	3165	accggagtcctggacaaaataca	164871	618466	see also 7895 line	-
7899	ADCY2	NM_020546.1	3273	gacctgaagacgtacttgttaa	164876	618470	see also 7895 line	-
7900	AMHR2	NM_020547.1	170	gagtgccggggaagcaacaaagaca	72052	493801	transforming growth factor-beta receptor	persistent Mullerian duct syndrome(持続性ミュラー管症候群)
7901	C11orf15	NM_020644.1	384	ctgtctacgtgtgaatgcaaat	326080	691424	kinase related	-
7902	C11orf15	NM_020644.1	386	gtctacgtgtgaatgcaaat	326081	691425	see also 7901 line	-

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7903	C11orf15	NM_020644.1	424	gtcacaatcaaggttaccattat	326082	691426	see also 7901 line	
7904	C11orf15	NM_020644.1	426	cacaatcaaggttaccattataa	326083	691427	see also 7901 line	
7905	JPH1	NM_020647.1	1044	ttctgtccggtggataaagaag	280953	659983	-	-
7906	JPH1	NM_020647.1	1871	aagctgaactgtctatacaaaa	280961	659999	see also 7905 line	
7907	PEL1	NM_020651.2	4039	atgtttctctgatogaataaaa	377853	741295	-	-
7908	PEL1	NM_020651.2	4253	aagaccagcatagatacatat	377856	713331	see also 7907 line	
7909	PEL1	NM_020651.2	4258	cagcatagcatatcatatcttt	377858	713333	see also 7907 line	
7910	PEL1	NM_020651.2	4576	atgtaggttggtgaccactaatgg	377867	713347	see also 7907 line	
7911	PEL1	NM_020651.2	5027	atcgtgaatgtcctatgtgagg	377878	713360	see also 7907 line	
7912	CLK4	NM_020666.1	686	ttgatcatcatgtgtcatgtttgt	77195	498456	kinase related	-
7913	CLK4	NM_020666.1	886	aagctgactatgtagtoaataa	77199	498461	see also 7912 line	
7914	RAB22A	NM_020673.2	693	tttagagaccagcgcaaaaaac	110039	715420	signal transduction	protein transporter
7915	ABHD6	NM_020676.3	124	atgtgttaaacatgtttgtgatt	204091	594511	-	-
7916	DSCAML1	NM_020693.2	445	ccccctccgcttcaatagcttt	186074	737850	-	-
7917	DSCAML1	NM_020693.2	446	ccccctccgcttcaatagcttta	186075	737851	see also 7916 line	
7918	DSCAML1	NM_020693.2	447	ccccctccgcttcaatagctttat	186076	737852	see also 7916 line	
7919	DSCAML1	NM_020693.2	449	ctcagcttcaatagctttatcc	186077	737853	see also 7916 line	
7920	DSCAML1	NM_020693.2	452	sgccttcaatagctttatccacg	186078	737854	see also 7916 line	
7921	DSCAML1	NM_020693.2	565	cogtccgggtggaggatcaaaag	186082	737858	see also 7916 line	
7922	KIAA1145	NM_020698.1	841	cagcgtaccatcgtgaacaaac	326847	771702	-	-
7923	KIAA1145	NM_020698.1	842	agcgtaaccatcgtgaacaaac	326848	771703	see also 7922 line	
7924	P66beta	NM_020699.1	1279	cccagtgccgcacagatttcaacc	8842	442442	transcription_regulat	-
7925	P66beta	NM_020699.1	1515	gagaccatcatgagacatcatatc	8847	442445	see also 7924 line	
7926	P66beta	NM_020699.1	1664	agggtgaacattgctatcattga	8851	442451	see also 7924 line	
7927	SLC12A5	NM_020708.3	1026	ctgtctcgcaatggctttgatgt	256792	640469	-	-
7928	SLC12A5	NM_020708.3	1028	gtctcgcaatggctttgatgtct	256793	640470	see also 7927 line	
7929	SLC12A5	NM_020708.3	1327	gtgatagaccctctacttcaacc	256795	640474	see also 7927 line	
7930	KIAA1287	NM_020748.1	383	cagcagcttaggcataaaccttgg	378367	729394	-	-
7931	KIAA1287	NM_020748.1	912	tggcttgacattggatcattact	378383	729403	see also 7930 line	
7932	KIAA1287	NM_020748.1	1544	aaccagcttagtgcattcattga	378399	729410	see also 7930 line	
7933	KIAA1287	NM_020748.1	1548	agcttagtgcattcattgacttg	378400	729411	see also 7930 line	
7934	KIAA1287	NM_020748.1	2561	tgggtaatgacggtaaatgcact	378435	729437	see also 7930 line	
7935	KIAA1287	NM_020748.1	3089	tacattgcagatcccaacatgic	378450	729455	see also 7930 line	
7936	KIAA1287	NM_020748.1	3094	tgcagatcccaacattgcttaagc	378451	729456	see also 7930 line	
7937	KIAA1287	NM_020748.1	3120	ttaacttcaagggttatccatgt	378453	729457	see also 7930 line	
7938	KIAA1287	NM_020748.1	3425	ttgtatgaggattatgtcttt	378464	729472	see also 7930 line	
7939	XPO5	NM_020750.1	154	ctggaagccctcaagtttttga	378469	733124	-	-
7940	XPO5	NM_020750.1	3560	tccgaagaaggttcacatttaag	378537	733209	see also 7939 line	
7941	COG6	NM_020751.1	432	cagactcaagatttaattagtaaa	268698	650804	-	-
7942	COG6	NM_020751.1	1112	caggcctctaaaggcttcaattg	268718	650824	see also 7941 line	
7943	COG6	NM_020751.1	1113	aggcctctaaaggcttcaattga	268719	650825	see also 7941 line	
7944	COG6	NM_020751.1	1663	atgagcaagcctctatgttta	268742	650849	see also 7941 line	
7945	TDE2	NM_020755.2	378	ttctcttctactaatgatcaaaa	327610	693348	-	-

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7946	raptor	NM_020761.1	1230	gtcacactggatttgatagaaa	378565	736875	-	-	-
7947	HACE1	NM_020771.2	1652	atgacttcaactcgttttcattga	228965	615527	-	-	-
7948	HACE1	NM_020771.2	1780	aagattcatcatatcataaaag	228972	615533	see also 7947 line	-	-
7949	HACE1	NM_020771.2	1905	tgcgtgttcacagagattctatt	228977	615536	see also 7947 line	-	-
7950	KIAA1322	NM_020773.1	1503	aagccagctcggagcttataaa	378760	749084	-	-	-
7951	KIAA1322	NM_020773.1	1732	accctgtcaatggcgtttttta	378766	749091	see also 7950 line	-	-
7952	MIB	NM_020774.1	261	ctgcgcgcagcaaccaatcattg	378776	754311	-	-	-
7953	MIB	NM_020774.1	262	tgcgcgcagcaaccaatcattgg	378777	754312	see also 7952 line	-	-
7954	MIB	NM_020774.1	823	atgtttgagactttaactacaac	378793	754329	see also 7952 line	-	-
7955	MIB	NM_020774.1	1084	atgcttccaacttttagttaaagt	378800	754335	see also 7952 line	-	-
7956	MIB	NM_020774.1	1106	ttagccgagtacaacagatttat	378801	754336	see also 7952 line	-	-
7957	MIB	NM_020774.1	1107	tggccgagtagacaacagatttat	378802	754337	see also 7952 line	-	-
7958	MIB	NM_020774.1	1109	gcccgggtacaacagatttatca	378803	754339	see also 7952 line	-	-
7959	MIB	NM_020774.1	1356	aagaccagatgtgatgtaaatg	378811	754344	see also 7952 line	-	-
7960	MIB	NM_020774.1	1824	tccagtgcaatgcgtgttttac	378827	754354	see also 7952 line	-	-
7961	MIB	NM_020774.1	2403	gggtctcggagtcctctctatga	378843	754372	see also 7952 line	-	-
7962	MIDORI	NM_020778.1	1310	gcgcctggttcgccaaagtgaagc	91455	495543	kinase related	-	-
7963	MIDORI	NM_020778.1	5292	atctacggcgctgcacaacatat	91481	495572	see also 7962 line	-	-
7964	KIAA1336	NM_020779.2	1380	atgaccaaaccacatgtgatgc	378964	774067	-	-	-
7965	KIAA1336	NM_020779.2	1473	cagatcacacggtctcgaaaga	378966	774069	see also 7964 line	-	-
7966	ZNF398	NM_020781.2	1299	gaggacaagtgcattttactca	45474	487630	transcription_regulat	-	-
7967	SYT4	NM_020783.2	237	aagactctcatatacaagtttgt	275126	699006	transporter	-	-
7968	IGSF9	NM_020789.2	2938	ccctcttcggagagatgaatgt	379037	745429	-	-	-
7969	IGSF9	NM_020789.2	3579	tgccttcggagggaattctctgg	379044	745431	see also 7968 line	-	-
7970	KIAA1363	NM_020792.1	1258	tgggaatccggactaggaatagt	205261	595226	-	-	-
7971	KIAA1363	NM_020792.1	1264	tccggactaggaatagttacatc	205262	595227	see also 7970 line	-	-
7972	SEMA6A	NM_020796.1	744	ttcgcatggcaactatacaaac	135728	540216	receptor activity, apoptosis, signal transduction	-	non-small-cell lung cancer(非小細胞肺癌)
7973	SEMA6A	NM_020796.1	2549	aggagtgattgggaaagtgtac	135779	540261	see also 7972 line	-	-
7974	SEMA6A	NM_020796.1	2550	gggagtgttcgggaaagtacc	135780	540262	see also 7972 line	-	-
7975	KIAA1376	NM_020801.1	483	cacgaagagatgatataatc	314094	804868	-	-	-
7976	KIAA1376	NM_020801.1	532	caggaaagcatgaatgcattc	314097	804869	see also 7975 line	-	-
7977	KIAA1376	NM_020801.1	620	ttaggtgaagccggaattgcaca	314099	804870	see also 7975 line	-	-
7978	GPHN	NM_020806.3	1460	aagctcggccaggcccaagatc	236543	671592	enzyme	-	-
7979	GPHN	NM_020806.3	1630	gggaatgagctgctaaatctcga	236550	671597	see also 7978 line	-	-
7980	GPHN	NM_020806.3	2063	atctcggcccaaccatcatcaa	236565	671612	see also 7978 line	-	-
7981	GPHN	NM_020806.3	2064	tcctcggcccaaccatcatcaaa	236566	671613	see also 7978 line	-	-
7982	PCDH10	NM_020815.1	2221	gcccgtctagacagtgtatgga	149438	550989	-	-	-
7983	PCDH10	NM_020815.1	3313	cgccaaagaccgacctgatgttc	149450	551007	see also 7982 line	-	-
7984	SYT13	NM_020826.1	1114	gtggaacgagatgatoatgttg	275017	657563	-	-	-
7985	KIAA1441	NM_020832.1	1736	gagcctggcaggcactatgacc	265178	647973	-	-	-
7986	KIAA1449	NM_020839.2	748	aacataccgagttccatgatgaag	379417	722863	-	-	-

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7987	KIAA1449	NM_020839.2	1685	atgcccaaatccacaaaattcc	379452	722900	see also 7986 line	
7988	OSBPL8	NM_020841.3	520	tcgctcttggtgtagcaaga	303670	789351	-	-
7989	ZNF291	NM_020843.1	47	ttccagcgtcccaatagtcata	379459	789702	-	-
7990	ZNF291	NM_020843.1	3350	gtgtgaacatgggtctgattga	379565	789766	see also 7989 line	
7991	ZNF291	NM_020843.1	3846	tcgtctgtgtgggtacttcact	379580	789774	see also 7989 line	
7992	PITPNM2	NM_020845.1	1765	gggggcatctggcatttgatgc	150632	564226	-	-
7993	KIAA1463	NM_020849.1	812	cactaggaaggaatccatatct	236613	621453	-	-
7994	KIAA1463	NM_020849.1	2021	ctgtcagcaccacttttgatca	236633	621476	see also 7993 line	
7995	KIAA1468	NM_020854.2	1126	cagtgttggaacagattaatca	379556	782902	-	-
7996	KIAA1468	NM_020854.2	1128	gtgttggaacagattaatcaca	379557	782903	see also 7995 line	
7997	KIAA1468	NM_020854.2	2557	ttccgagatgagttgttatacc	379707	782941	see also 7995 line	
7998	KIAA1474	NM_020856.1	1708	tggaccccatgagcatgcttttc	5825	441559	transcription_regulat	-
7999	KIAA1474	NM_020856.1	1998	gagaatgcctgtcagatatatc	5833	441564	see also 7998 line	
8000	SEMA6D	NM_020858.1	554	aggcaatatccggtttttagagg	320815	775529	receptor activity	-
8001	SEMA6D	NM_020858.1	617	cagctgatgtgaaaaattcaga	320817	775531	see also 8000 line	
8002	SEMA6D	NM_020858.1	1056	ctgccttcgcacaataaataat	320837	775542	see also 8000 line	
8003	SEMA6D	NM_020858.1	1114	tggcatagataatggaaactatg	320839	775546	see also 8000 line	
8004	SEMA6D	NM_020858.1	1115	gccatagaatatggaaactatgt	320840	775547	see also 8000 line	
8005	DHX36	NM_020865.1	1698	ctgtgttcggaaaaataatatt	59907	483726	-	-
8006	DHX36	NM_020865.1	1699	tgggttcggaaaaatagtaattg	59908	483727	see also 8005 line	
8007	DHX36	NM_020865.1	1704	tccggaaaaatagtaattgctacc	59909	483728	see also 8005 line	
8008	DHX36	NM_020865.1	1838	gagtggttagtaagcgaatgac	59915	483731	see also 8005 line	
8009	KLHL1	NM_020866.1	1763	ttgatgatgtgggtcagcatga	117703	523261	actin binding	-
8010	DPPI0	NM_020868.1	2416	tggctatatgcatcaatgatct	186974	580813	-	-
8011	LRRN1	NM_020873.3	1706	gggtcaactcccatggaaataag	379821	697519	-	-
8012	PHF12	NM_020889.1	1468	atggatgtgtccgaatcacatcg	34707	463497	transcription_regulat	-
8013	PHF12	NM_020889.1	1477	tcgcaatcacatcgacacatgg	34708	463498	see also 8012 line	
8014	PHF12	NM_020889.1	1842	ttgcgtccagtgacagcatattg	34717	463506	see also 8012 line	
8015	PHF12	NM_020889.1	1843	tgcctccagtgacagcatattga	34718	463507	see also 8012 line	
8016	KIAA1524	NM_020890.1	575	ttgtcggcacaattcttctgttc	379993	776544	-	-
8017	KIAA1524	NM_020890.1	1547	tccttgatggaagtaagcttct	380038	776569	see also 8016 line	
8018	KIAA1524	NM_020890.1	1555	tggaaagtaagcttctcaaaata	380039	776571	see also 8016 line	
8019	OSBPL5	NM_020896.2	999	ctggagaacagcatcattctcaga	179588	572865	-	-
8020	HGN3	NM_020897.1	681	tcgcgtccatccgcgtacataca	107983	517973	-	-
8021	KIAA1560	NM_020918.2	452	ttgggtttgcggaaatgtatttta	215822	603602	-	-
8022	KIAA1560	NM_020918.2	454	gggtttgcggaaatgtatttta	215823	603603	see also 8021 line	
8023	ALS2	NM_020919.2	1688	aagtttccccaggctcttaaga	294669	735547	primary lateral sclerosis(原発性側索硬化症)、 spastic paralysis(痙性麻痺)、amyotrophic lateral sclerosis(遺伝性筋萎縮性側索硬化症)	-
8024	ALS2	NM_020919.2	2185	ctctctgtagtaagcttgatata	294683	735560	see also 8023 line	
8025	ALS2	NM_020919.2	2608	gcctgcattgatttcataata	294702	735574	see also 8023 line	
8026	ALS2	NM_020919.2	2714	ttgccaatcagacagcttcataa	294705	735577	see also 8023 line	



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8027	AL52	NM_020919.2	3654	ttggccagtggtgtaataagataag	294728	735594	see also 8023 line	
8028	AL52	NM_020919.2	3659	cagtggtgtaataagataagc	294729	735595	see also 8023 line	
8029	AL52	NM_020919.2	4801	gtcaatcttgagagagataaaa	294768	735622	see also 8023 line	
8030	AL52	NM_020919.2	4875	tgcagcagatcagacacattt	294772	735625	see also 8023 line	
8031	ZNF481	NM_020924.2	719	gcccacagcactccctgataaatt	45666	815735	transcription_regulat or	protein binding
8032	ZNF481	NM_020924.2	930	gagaaactacgccaaccatttaa	45673	815741	see also 8031 line	
8033	KIAA1573	NM_020925.1	1873	tagttggcaaaataatcctaagc	265214	811570	-	-
8034	KIAA1573	NM_020925.1	2034	ctgtgtattgtgtgatacaacc	265220	811574	see also 8033 line	
8035	KIAA1573	NM_020925.1	2409	tacattgtccgcgttacatagc	265222	811588	see also 8033 line	
8036	KIAA1573	NM_020925.1	2435	accacatggcgtctcagaaattt	265223	811590	see also 8033 line	
8037	KIAA1587	NM_020932.1	2490	aactaagctgcctataccaaaga	380183	745932	-	-
8038	USP37	NM_020935.1	398	atggtctatcagaattcgaagt	189734	791591	-	-
8039	USP37	NM_020935.1	530	ttaagctaaagtataacattaaa	189738	791595	see also 8038 line	
8040	USP37	NM_020935.1	2012	gtgtcttgcaggcacaaattt	189774	791651	see also 8038 line	
8041	USP37	NM_020935.1	2013	tgtcttgcaggcacaaattt	189775	791652	see also 8038 line	
8042	USP37	NM_020935.1	2018	tgtcaggcacaaatttaacagg	189776	791654	see also 8038 line	
8043	GBA2	NM_020944.2	1321	tgcctgtagagctcttctgtgg	220527	607770	-	-
8044	GBA2	NM_020944.2	1797	gtccactacagcgggtatacag	220530	607775	see also 8043 line	
8045	GBA2	NM_020944.2	1938	ctgcctcctcgtgcacaaatctgc	220533	607778	see also 8043 line	
8046	TRPM3	NM_020952.1	1120	aagagacatggcgccctcaaatac	262014	646479	channel	-
8047	TRPM3	NM_020952.1	1127	atgggcccctcaaatatattgtac	262016	646480	see also 8046 line	
8048	TRPM3	NM_020952.1	2439	gagtgagcggagggtctatctact	262038	646505	see also 8046 line	
8049	TRPM3	NM_020952.1	2441	gtgcggagagagctctctactgc	262039	646506	see also 8046 line	
8050	TRPM3	NM_020952.1	2500	atcttggcgtgaacaaagtatt	262041	646510	see also 8046 line	
8051	TRPM3	NM_020952.1	3063	aagggaactacggcctgaacctct	262051	646522	see also 8046 line	
8052	MOV10	NM_020963.1	1338	accgtgtaagctgagcttttcc	91822	508638	-	-
8053	MAGI-3	NM_020965.2	655	aggatcaattgaccacaaactgc	209324	606792	kinase_related	-
8054	MAGI-3	NM_020965.2	2483	tacctgaattctaagactttata	209352	606837	see also 8053 line	
8055	MAGI-3	NM_020965.2	2592	atggacctgaccagctctatat	209354	606839	see also 8053 line	
8056	MAGI-3	NM_020965.2	2593	tggacctgaccagctctatat	209355	606840	see also 8053 line	
8057	MAGI-3	NM_020965.2	2595	gacctgaccagctctatatatt	209356	606841	see also 8053 line	
8058	MAGI-3	NM_020965.2	3659	agggcaggaaactggcttgatacc	209372	606862	see also 8053 line	
8059	SCUBE2	NM_020974.1	1547	aagttaaccttaagctaaatg	152918	710091	-	-
8060	SCUBE2	NM_020974.1	2674	atctgtgtagtgggaaaacctct	152948	710118	see also 8059 line	
8061	SCUBE2	NM_020974.1	3030	atccgattgtcagttccaaagt	152952	710124	see also 8059 line	
8062	CKMT1	NM_020990.2	624	ttagtagagggtatgtatgtcc	209443	598805	kinase_related	creatine kinase
8063	NR2F2	NM_021005.2	1106	ctcgtacctgtccgatatattt	8466	447192	or, transcription co- repressor	-
8064	NR2F2	NM_021005.2	1107	tctgtacctgtccgatatattt	8467	447193	see also 8063 line	
8065	NR2F2	NM_021005.2	1703	ctctcagtcataagagaattgt	8474	447197	see also 8063 line	
8066	NR2F2	NM_021005.2	1780	tactgtccggcagcagtttaac	8476	447200	see also 8063 line	

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8067	LZTS1	NM_021020.1	294	gagcgaagacattcttcatca	6238	816826	transcription_regulat	-	-
8068	LZTS1	NM_021020.1	1867	atccctacaggacatcatgc	6239	816839	see also 8067 line	-	-
8069	TLX3	NM_021025.1	211	gaggacgggatcttcaagtgt	380365	449590	transcription_regulat	transcription factor	-
8070	RAP2A	NM_021033.3	559	ccgctgaagcgggtatgagaag	110583	518355	signal transduction	RAS small	-
8071	MBNL1	NM_021038.1	1505	gacacgaatgaatttgcaca	52460	474092	-	monomeric	-
8072	MBNL1	NM_021038.1	1521	ttgcacatcttcgaaaagctgc	52461	474093	see also 8071 line	RNA binding	-
8073	MBNL1	NM_021038.1	1531	ttcgaagaagctccaagtggaa	52462	474094	see also 8071 line	-	-
8074	MBNL1	NM_021038.1	1753	acctgtgccaatgtttcoagttg	52467	474099	see also 8071 line	-	-
8075	MBNL1	NM_021038.1	2279	aacgtgccaccgagcttttaa	52475	474110	see also 8071 line	-	-
8076	DHH	NM_021044.2	1435	gccgactggcatcattgtact	191331	584819	-	peptidase	-
8077	HCN1	NM_021072.1	657	aagtcatcaagatgaattatta	261180	517904	channel	-	-
8078	HCN1	NM_021072.1	1238	cggcagtatcaagagaagtataa	261198	517921	see also 8077 line	-	-
8079	NMT1	NM_021079.3	932	agctgattgaagtgaagttctcc	215452	602739	glycyl-peptide N-	-	-
8080	DAB1	NM_021080.3	835	cagctcggggagacaaattatgt	319866	534267	tetradecanoyltrans	ferase	-
8081	SLC15A2	NM_021082.2	608	atcaatgcaggagagcttgatttc	256486	643923	peptide/hydrogen	symporter	-
8082	XK	NM_021083.2	863	tcocattccctgagaaacataga	271805	713658	-	-	McLeod syndrome with neuroacanthosis(神経黒色表皮腫におけるマククラウド症候群)、McLeod syndrome(マククラウド症候群)
8083	MTMR3	NM_021090.2	1581	gacccttattaccgaaccataga	193004	558962	phosphatase	transporter	-
8084	SLC8A1	NM_021097.1	1892	aacatacatcagtoaagtgtaattg	122771	527355	-	sodium transporter	-
8085	SLC8A1	NM_021097.1	2767	atggggaacagttcaaaagtgtcc	122779	527372	see also 8084 line	-	-
8086	RECK	NM_021111.1	222	aacaaatgtccgctgatgtatg	293083	662912	cell cycle	serine protease	-
8087	RECK	NM_021111.1	1796	ctgtatggaaatgcactgtatag	293142	662945	see also 8086 line	-	-
8088	RECK	NM_021111.1	2174	ctgctgacgacttttgataaat	293149	662956	see also 8086 line	-	-
8089	RECK	NM_021111.1	2175	tgcctgacgacttttgataaat	293150	662957	see also 8086 line	-	-
8090	RECK	NM_021111.1	2176	gcctgacgacttttgataaat	293151	662958	see also 8086 line	-	-
8091	CRY2	NM_021117.1	754	ggcctgggttgcgaactatgaga	234008	618377	-	-	-
8092	CRY2	NM_021117.1	1193	gagagcgggttccgggtatttga	234012	618383	see also 8091 line	-	-
8093	CRY2	NM_021117.1	1195	gagcgggttccgggtatttga	234013	618384	see also 8091 line	-	-
8094	CRY2	NM_021117.1	1385	ttccctctcgatatacatatga	234018	618389	see also 8091 line	-	-
8095	DLG3	NM_021120.1	1946	aagagctcgatgaaactgtga	209293	534591	kinase_related	guanylate kinase	-
8096	DLG3	NM_021120.1	2014	cgggttaagtgaactattat	209297	534594	see also 8095 line	-	-
8097	DLG3	NM_021120.1	2016	gggttaagtgaactattatg	209298	534596	see also 8095 line	-	-
8098	RTN1	NM_021136.1	611	ttctattctggaatagataga	255128	466577	signal transduction	signal transducer	-
8099	RTN1	NM_021136.1	2374	gacttgaaggactcacataaat	255150	466605	see also 8098 line	-	-
8100	UTX	NM_021140.1	1195	ttgcacagaataaagtattta	324923	690666	-	-	-
8101	UTX	NM_021140.1	1196	tgcagcaggaattaaagtattac	324924	690667	see also 8100 line	-	-

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8102	UTX	NM_021140.1	1725	ttggccaatggaccctttttctgc	324935	690676	see also 8100 line	
8103	UTX	NM_021140.1	1915	agcgtgtaaaacccaatctct	324938	690678	see also 8100 line	
8104	UTX	NM_021140.1	4180	aagctatgaccaatttacatta	324955	690733	see also 8100 line	
8105	XRC05	NM_021141.2	1211	ttcgatatgcttatgacaaaaga	20329	470390	kinase_related	Ku70/80 antigen complex
8106	XRC05	NM_021141.2	1316	aagactggcgcaatacatgtt	20334	470391	see also 8105 line	
8107	XRC05	NM_021141.2	1318	gacttgcgcaatacatattt	20335	470392	see also 8105 line	
8108	DMTF1	NM_021145.1	1608	gccccttggaagataatacagc	2792	458385	transcription_regulat	or, kinase_related
8109	DMTF1	NM_021145.1	1915	atgctttatcccgagaacattg	2805	458394	see also 8108 line	
8110	DMTF1	NM_021145.1	1922	atccccagacatttggtaaca	2807	458395	see also 8108 line	
8111	RAP1GDS	NM_021159.3	726	tagcagaacttgagtcagtaaa	298178	757187		GTPase activator
8112	RAP1GDS	NM_021159.3	1586	accatggcaactagtagaacatgt	298200	757222	see also 8111 line	
8113	BAT5	NM_021160.1	150	ttccagctctgggatacgtact	235827	621643	-	-
8114	KCNK10	NM_021161.3	986	aggaggcaaaatctttgtattt	261240	644698	channel,	
8115	KCNK10	NM_021161.3	1041	ttcttattggctggaattggaga	261242	644702	signal_transduction	-
8116	IGRP	NM_021176.1	362	gtgtctgtatgtatgtgtaacc	380592	711051	see also 8114 line	
8117	RAP2C	NM_021183.3	1055	caggatacaagccaaatgagaga	110597	520239	signal_transduction	-
8118	RAP2C	NM_021183.3	1262	atcgatcgcaaatgaactattc	110601	520246	see also 8117 line	
8119	RAP2C	NM_021183.3	1298	aagcaagaatcagttgtacaac	110602	520249	see also 8117 line	
8120	ZNF410	NM_021188.1	514	aagatcacagccaagtgtatagc	380716	754132	transcription_regulat	or
8121	ZNF410	NM_021188.1	1315	agccactaatggcagtagtttg	380730	754141	see also 8120 line	
8122	ZNF410	NM_021188.1	1316	gocactaatggcgagtagtttg	380731	754142	see also 8120 line	
8123	PTBP2	NM_021190.1	463	gacagataatacattaaacccac	65151	471286	-	-
8124	PTBP2	NM_021190.1	576	cagccagagtcagtagcttaga	65153	471290	see also 8123 line	
8125	PTBP2	NM_021190.1	581	cagagtcagtagcttagaataat	65156	471291	see also 8123 line	
8126	PTBP2	NM_021190.1	583	gagtcagtagcttagaataatta	65157	471292	see also 8123 line	
8127	PTBP2	NM_021190.1	793	ctgtaccctaaggattgatttt	65169	471297	see also 8123 line	
8128	PTBP2	NM_021190.1	849	atgtataaagtaggattataact	65170	471300	see also 8123 line	
8129	PTBP2	NM_021190.1	1317	ttgatcatcaagggtacacaaa	65177	471309	see also 8123 line	
8130	HOXD11	NM_021192.2	841	ctggaacgcgagttttctttaa	380743	697137	transcription_regulat	or
8131	HOXD11	NM_021192.2	842	tggaaacgcgagttttctttaac	380744	697138	see also 8130 line	
8132	SIC30A1	NM_021194.1	1395	tagcaatttgttttagaactta	266803	653921	-	cation transporter
8133	CTDSP1	NM_021198.1	340	gacagctcgccgcttactactca	278890	690158	phosphatase	-
8134	CTDSP1	NM_021198.1	342	cagctcgccgcttactactaga	278891	690159	see also 8133 line	
8135	CTDSP1	NM_021198.1	756	gcgaatggcgagctctttgaat	278893	690161	see also 8133 line	
8136	CTDSP1	NM_021198.1	998	cgggtggcctggtgttgacaac	278895	690164	see also 8133 line	
8137	C20orf110	NM_021202.1	976	gccagcgccagttcaactactga	380754	800661	-	-
8138	APMCF1	NM_021203.2	546	tagctgcaataagcaagattatt	108205	520540	receptor activity	receptor
8139	APMCF1	NM_021203.2	547	agcctgcaataagcaagattatt	108206	520541	see also 8138 line	
8140	C20orf77	NM_021215.2	436	gagctcgcaagcccaatcaaa	380765	729497	-	-

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8141	C20orf77	NM_021215.2	437	agctccgaaagccaaatcaaat	380766	729498	see also 8140 line		
8142	DMRT3	NM_021240.2	1141	accgcctgatgctgaggataact	2742	443062	transcription_regulat	-	-
8143	STRAIT11	NM_021242.3	904	aacgccatgaatcgttcattgg	380881	725741	-	-	-
8144	RRAGD	NM_021244.2	957	ttgtattatggtctcaagaag	192254	586027	-	-	-
8145	RAB18	NM_021252.3	164	agcaacaataggtgttgacttta	109934	519919	signal_transduction	protein transporter	-
8146	RAB18	NM_021252.3	371	aacatactgtacaagaatgaca	109945	519930	see also 8145 line	-	-
8147	RAB18	NM_021252.3	434	tcgtgaagtcgatagaatgaag	109947	519934	see also 8145 line	-	-
8148	TRIM39	NM_021253.2	1352	gtcaggcttcggagatgcttaagg	160500	559887	-	-	-
8149	TRIM39	NM_021253.2	1955	accgaagcgggtaggcatattcc	160510	559897	see also 8148 line	-	-
8150	TRIM39	NM_021253.2	1959	aagcgggtaggcatattctctaga	160511	559898	see also 8148 line	-	-
8151	PLEKHA1	NM_021622.2	2116	aacacaataggctacttcaaatc	173044	749304	-	-	-
8152	RISC	NM_021626.1	183	atgtctgtggtgctctattatgc	187287	580950	-	-	-
8153	RISC	NM_021626.1	834	aacttctataacatcttaactaa	187298	580966	see also 8152 line	-	-
8154	SENP2	NM_021627.1	320	gaccaagattagatgctttatt	135787	531256	signal_transduction	-	-
8155	SENP2	NM_021627.1	523	ctgaacctgggttaataaactcc	135791	531266	see also 8154 line	-	-
8156	C3IP1	NM_021633.2	916	agccttcatcgcgttagttta	129532	533032	-	-	-
8157	C3IP1	NM_021633.2	917	gccttcatcgcgttagttta	129533	533033	see also 8156 line	-	-
8158	C3IP1	NM_021633.2	921	ttcatcgcgttagtttaaatg	129534	533034	see also 8156 line	-	-
8159	SP192	NM_021639.3	1028	ttgtctcgttctgcttaatttc	380977	740874	-	-	-
8160	SP192	NM_021639.3	1031	ttctctgttctgcttaatttcca	380978	740875	see also 8159 line	-	-
8161	SP192	NM_021639.3	1252	gtctctaaaggaggacatatgtgg	380981	740882	see also 8159 line	-	-
8162	TRB2	NM_021643.1	1266	atggagatcgcgggacaaacacc	103058	495583	kinase_related	-	-
8163	TRB2	NM_021643.1	1368	cgcccgagactccgaacttctg	103063	495586	see also 8162 line	-	-
8164	TRB2	NM_021643.1	1607	atgtctttagcgaagctatgg	103071	495589	see also 8162 line	-	-
8165	TRB2	NM_021643.1	2110	ggggctgacctgcggagaaattc	103079	495598	see also 8162 line	-	-
8166	OTX2	NM_021728.2	839	caggcttcagggttagtcaagg	8792	447533	transcription_regulat	-	-
8167	OTX2	NM_021728.2	953	ctcagtcctcctggtaccatgc	8797	447537	see also 8166 line	-	-
8168	OTX2	NM_021728.2	1054	aaccactgattgcttgattata	8799	447538	see also 8166 line	-	-
8169	FOXA2	NM_021784.3	577	ccccctacgcgaacatgaactcc	4012	443897	transcription_regulat	-	-
8170	ACE2	NM_021804.1	914	tgggttagattttggacaaatct	154479	555624	-	-	-
8171	ACE2	NM_021804.1	916	gggttagattttggacaaatctgt	154480	555625	see also 8170 line	-	-
8172	ACE2	NM_021804.1	2030	ttccgatctctgttgcatatgc	154528	555658	see also 8170 line	-	-
8173	SEC8	NM_021807.2	1590	cagtgctctcttcgagatgtct	65879	698701	-	-	-
8174	SEC8	NM_021807.2	2631	aagaaaatgtgtagggaacattt	65900	698716	see also 8173 line	-	-
8175	GALNT9	NM_021808.2	566	cacgtacaggaggagtgagaaca	211247	812823	-	-	-
8176	SLC5A7	NM_021815.2	697	tggctgcagcaattttctctgc	272091	657004	-	-	-
8177	SAV1	NM_021818.2	1142	tagtgtacctcctggatgataaac	322087	686729	signal_transduction	-	-
8178	MDS025	NM_021825.3	637	atgtcagccttggtatctatctat	381108	716979	-	-	-
8179	MDS025	NM_021825.3	702	cagctaattgctcattggatgc	381111	716980	see also 8178 line	-	-
8180	MDS025	NM_021825.3	980	ttcagagaccagtaataaaattg	381115	716991	see also 8178 line	-	-

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8181	PEO1	NM_021830.3	827	aactgaatccgccagatttgc	234645	618900	-	-	-	-	-
8182	FLJ21839	NM_021831.3	757	ctgtagtgccttgcgtatgtct	61654	480618	-	-	-	-	-
8183	FLJ21839	NM_021831.3	1525	gtggaataacatctatatccaaa	61666	480640	see also 8182 line	-	-	-	-
8184	FLJ21839	NM_021831.3	1692	cagctacacactgaattcaact	61671	480645	see also 8182 line	-	-	-	-
8185	FLJ21839	NM_021831.3	1700	cacttgaagcaactacacact	61672	480647	see also 8182 line	-	-	-	-
8186	DTNB	NM_021907.3	309	tagaaatgcgtctcagaatttt	130956	648920	-	-	-	-	-
8187	DTNB	NM_021907.3	330	ttagtctacacactatcaact	130957	648923	see also 8186 line	-	-	-	-
8188	DTNB	NM_021907.3	388	acgtgcaaacctcattctgtg	130965	648927	see also 8186 line	-	-	-	-
8189	DTNB	NM_021907.3	642	cagtaaaagtctgttagcaacc	130976	648938	see also 8186 line	-	-	-	-
8190	DTNB	NM_021907.3	707	tccagatgtcagattccaattg	130978	648939	see also 8186 line	-	-	-	-
8191	DTNB	NM_021907.3	717	cagattccaatggcttaataa	130980	648940	see also 8186 line	-	-	-	-
8192	DTNB	NM_021907.3	1139	aagagctggagccatcaattag	130989	648945	see also 8186 line	-	-	-	-
8193	DTNB	NM_021907.3	1142	aagctgagccatcaattagtaa	130990	648946	see also 8186 line	-	-	-	-
8194	DTNB	NM_021907.3	1143	agctggccatgcaattagtaaa	130991	648947	see also 8186 line	-	-	-	-
8195	DTNB	NM_021907.3	1319	cccacaaagaggttacagtag	130995	648955	see also 8186 line	-	-	-	-
8196	GFL2	NM_021914.5	272	aagcagtgacaaaagacaaataa	116139	521313	-	-	actin binding	-	-
8197	ALX4	NM_021926.1	110	tgcgtgagactgcgtcttact	871	441657	transcription_regulat	-	or	translation	-
8198	ALX4	NM_021926.1	148	ctgcctatggagcgtctactacgc	872	441658	see also 8197 line	-	-	-	-
8199	FLJ13220	NM_021927.1	1079	cagcaactatataaattatgc	57496	477388	-	-	-	-	-
8200	FLJ11785	NM_021930.2	376	aagcaacagctactacaattca	381290	795016	-	-	-	-	-
8201	FLJ11785	NM_021930.2	1177	aagctactatgttgattggaac	381319	795027	see also 8200 line	-	-	-	-
8202	FLJ11785	NM_021930.2	1566	aactgacaggtataaaaattcttc	381341	795033	see also 8200 line	-	-	-	-
8203	RIC-8	NM_021932.4	1549	gagtgcccccggattcaaggt	381377	745872	-	-	-	-	-
8204	SMAP1	NM_021940.2	247	ctcgatgggtctctcgaattatt	39590	467158	-	-	-	-	-
8205	TEX27	NM_021943.1	158	gggttcagcagcaagactatgaatc	284689	469081	-	-	-	-	-
8206	TEX27	NM_021943.1	245	aagtaacagcccaatcagattgt	284691	469084	see also 8205 line	-	-	-	-
8207	C14orf93	NM_021944.1	1370	caccaatgacaagagattcaatg	381517	736759	-	-	-	-	-
8208	C14orf93	NM_021944.1	1371	accatgacaagagattcaatgg	381518	736760	see also 8207 line	-	-	-	-
8209	FLJ11362	NM_021946.2	4199	aggcccgtaagcagaagactcc	381565	804299	-	-	-	-	-
8210	SRR	NM_021947.1	179	aacaggcgcaactcttcttcca	234541	618877	-	-	-	-	-
8211	ELAVL4	NM_021952.2	475	gacagagtttaggtatggattt	47602	473754	-	-	-	-	-
8212	ELAVL4	NM_021952.2	485	agggtatggattgttaactata	47603	473756	see also 8211 line	-	-	-	-
8213	ELAVL4	NM_021952.2	1315	gagacagagttgttcaagtttc	47621	473763	see also 8211 line	-	-	-	-
8214	ELAVL4	NM_021952.2	1319	cagagttgttcaagtttcttta	47622	473764	see also 8211 line	-	-	-	-
8215	GJA3	NM_021954.2	438	gcggacctacgtcttcaacatca	381577	647290	-	-	connexon channel	-	-
8216	GRIK2	NM_021956.2	923	ggcattagctatgggaatgata	244459	632366	receptor_activity、 channel、 signal transduction	-	-	-	-

paraneoplastic encephalomyelitis(パラネオプラス  
ティック脳脊髄炎)mRNA binding、3'  
UTR

see also 8211 line

see also 8211 line

see also 8211 line

see also 8211 line

see also 8211 line

see also 8211 line

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	TEAD1	NM_021961.2	750	aggaatctcgtgattttcattc	381646	449457	transcription_regulat	translation	
8217	TEAD1	NM_021961.2	1142	ccagagactgtacaaacacc	381651	449462	see also 8217 line	regulator	-
8219	ZNF148	NM_021964.1	433	tggcgccatagacgaagtgcgt	44210	470481	transcription_regulat	specific RNA	
8220	ZNF148	NM_021964.1	793	ccagagagccagtagacttacaga	44215	470494	see also 8219 line	polymerase II	-
8221	ZNF148	NM_021964.1	795	gagagccagtagaacttacagaaa	44216	470495	see also 8219 line	transcription factor	
8222	ZNF148	NM_021964.1	797	gagccagtagacttacagaaaaa	44217	470496	see also 8219 line		
8223	ZNF148	NM_021964.1	798	agccagtagacttacagaaaaag	44218	470497	see also 8219 line		
8224	ZNF148	NM_021964.1	892	cctaatactcagttgttgagc	44223	470500	see also 8219 line		
8225	ZNF148	NM_021964.1	931	tagaacgaactatcacttacaga	44225	470501	see also 8219 line		
8226	ZNF148	NM_021964.1	1065	aaccatttcgtgtgatgaatgt	44226	470504	see also 8219 line		
8227	ZNF148	NM_021964.1	1186	cagaacagatcgtgtatgaac	44232	470510	see also 8219 line		
8228	ZNF148	NM_021964.1	1189	aacagatcgtgtatgaacata	44233	470511	see also 8219 line		
8229	ZNF148	NM_021964.1	1802	ttgaagaagaagcgggtatctca	44251	470523	see also 8219 line		
8230	ZNF148	NM_021964.1	1805	aagaagaagcgggtatctcaagc	44252	470524	see also 8219 line		
8231	ZNF148	NM_021964.1	1953	aggcactgaatgtggagattag	44258	470528	see also 8219 line		
8232	ZNF148	NM_021964.1	2265	gcccagccttaactttgtgact	44266	470541	see also 8219 line		
8233	ZNF148	NM_021964.1	2363	agctttogactaggaatgaattc	44267	470546	see also 8219 line		
8234	ZNF148	NM_021964.1	2410	gtccacattggactaatagtg	44269	470548	see also 8219 line		
8235	ZNF148	NM_021964.1	2672	gggacaagtgtgaattttcaga	44276	470553	see also 8219 line		
8236	RELA	NM_021975.1	664	aggacattgagggtgtatttcacg	10433	448092	transcription_regulat	Rel A homodimer	-
8237	SLC22A3	NM_021977.2	1250	tcccttttgcggcaagcaatata	266623	654401	or, apoptosis, kinase_related	-	-
8238	SLC22A3	NM_021977.2	1251	ccccttttgcggcaagcaatata	266624	654402	see also 8237 line	-	-
8239	OPTN	NM_021980.3	313	agccatgaagcctaataatcaag	312174	807184	signal_transduction	-	glaucoma(絶対緑内障)
8240	OPTN	NM_021980.3	314	ggcatgaagcctaataatcaagc	312175	807185	see also 8239 line	-	-
8241	ZNF6	NM_021982.2	597	ggctgactgcacatcatcgatg	45769	798724	-	-	-
8242	CUZD1	NM_022034.3	2364	ttgtaagggtgtatcccttattg	326373	688156	-	-	-
8243	TIA1	NM_022037.1	715	ctccaaagagtagtatatgagta	47722	475847	apoptosis	-	-
8244	TIA1	NM_022037.1	835	aactaatgcgtcagacttttca	47728	475853	see also 8243 line	-	-
8245	TIA1	NM_022037.1	1076	gtggggccagtggtatggaatg	47739	475860	see also 8243 line	-	-
8246	MTBP	NM_022045.2	324	tagttgtattggcgaagagatac	381685	537711	-	-	-
8247	DEF6	NM_022047.2	1644	ggccagcaccacagtggaacact	141617	547128	-	-	-
8248	CSNK1G1	NM_022048.1	291	ttcggagagctcagattaggttaa	77677	498942	kinase_related,	protein	serine/threonine
8249	CSNK1G1	NM_022048.1	292	tcggagagctcagattaggttaa	77678	498943	signal_transduction	kinase	-
8250	CSNK1G1	NM_022048.1	297	gagctcagattaggttaaaatct	77680	498944	see also 8248 line	-	-
8251	CSNK1G1	NM_022048.1	722	aacaaaaaacacacacacattata	77690	498962	see also 8248 line	-	-
8252	CSNK1G1	NM_022048.1	984	atggcaaccttactctgatgtgt	77694	498970	see also 8248 line	-	-
8253	KCNK13	NM_022054.2	1101	aaggctggagctactcttgactca	261274	644773	channel	-	-

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8254	SLC4A10	NM_022058.2	1344	aagattcctgctgaccacattgg	11620	448575	-	-	-
8255	SLC4A10	NM_022058.2	1433	aagatttttgggggactatttt	11622	448576	see also 8254 line	-	-
8256	SLC4A10	NM_022058.2	1641	atgacgggtagcctattctct	11628	448581	see also 8254 line	-	-
8257	SLC4A10	NM_022058.2	2303	gtgtatgttttaattgactatg	11649	448596	see also 8254 line	-	-
8258	PKNOX2	NM_022062.1	666	aggcacaacatgcgcacacaacc	9401	447797	transcription_regulat	-	-
8259	FLJ13188	NM_022063.1	888	tgcattgggggttgaagcaaga	381787	740082	or	-	-
8260	C14orf133	NM_022067.2	1675	gccatgtctgctcatgatacc	382015	750411	-	-	-
8261	C14orf133	NM_022067.2	1788	ctcagcagctcgcaaatctgatg	382018	750414	see also 8260 line	-	-
8262	FLJ23403	NM_022068.1	282	tggatgatggctcctcattcagttt	382024	776689	-	-	-
8263	FLJ23403	NM_022068.1	288	tggctcctcattcagtttgaacc	382025	776691	see also 8262 line	-	-
8264	FLJ23403	NM_022068.1	417	ctggtgtgactgagaggaaattc	382028	776692	see also 8262 line	-	-
8265	FLJ22609	NM_022072.2	655	cacagccttgataaatgtaatt	382148	805049	-	-	-
8266	HPS4	NM_022081.4	1233	ggctgcatcctctataaaggact	127375	529504	-	-	-
8267	ZNF335	NM_022095.3	1647	ctcgtcaaggagcacatgttca	45266	815771	transcription_regulat	-	-
8268	ANKRD5	NM_022096.4	2287	aagcctatgctgattatagaat	137840	543894	or	-	-
8269	ANKRD5	NM_022096.4	2289	ggcatatgctgattatagaataa	137842	543895	see also 8268 line	-	-
8270	LOC63929	NM_022098.2	679	aagctgagacgaacatggttgg	186645	580463	-	-	-
8271	CTL1	NM_022109.2	1662	tggattatgctgctcaactacc	272063	749007	-	-	-
8272	CTL1	NM_022109.2	1701	atgggtgctgctctgcatcatcg	272064	749010	see also 8271 line	-	-
8273	CLSPN	NM_022111.2	2622	gagcctaagacactttctctagg	130063	790077	-	-	-
8274	PRDM16	NM_022114.1	101	gtgacgttgactgttaataaat	9848	649547	transcription_regulat	-	-
8275	PRDM16	NM_022114.1	103	gacgtgactgttgaataataat	9849	649548	or	-	-
8276	PRDM16	NM_022114.1	109	gactgttaataataatagtatga	9852	649549	see also 8274 line	-	-
8277	PRDM16	NM_022114.1	1070	aacgtctggaatgtgaacactgc	9860	649558	see also 8274 line	-	-
8278	FIGNL1	NM_022116.2	625	aagtgccagctctggattgtcaat	82370	502440	-	-	-
8279	FIGNL1	NM_022116.2	627	gtggcagctctggattgtcaataa	82371	502441	see also 8278 line	-	-
8280	FIGNL1	NM_022116.2	2204	ctgctgacattgtaccataaca	82421	502485	see also 8278 line	-	-
8281	SE20-4	NM_022117.1	983	aagacattttccgctacttgacc	38932	458703	cell cycle,	-	-
8282	C13orf10	NM_022118.3	1383	cccaacttgataggactaacatc	58267	478353	signal_transduction	-	-
8283	C13orf10	NM_022118.3	1627	aagttctccagaattaataaat	58272	478360	, kinase_related	-	-
8284	NPAS3	NM_022123.1	885	gaccgtccccagccaaatcatg	254678	639240	see also 8282 line	-	-
8285	NPAS3	NM_022123.1	931	tgcctccctcctacgatcaatga	254679	639241	signal_transduction	-	-
8286	NPAS3	NM_022123.1	933	gcctccctcctacgatcaatgaag	254680	639242	transcription_regulat	-	-
8287	NPAS3	NM_022123.1	936	tcccctcctacgatcaatgaagtc	254681	639243	see also 8284 line	-	-
8288	NPAS3	NM_022123.1	942	tacgataaatgaagtcagaattg	254682	639244	see also 8284 line	-	-
8289	CDH23	NM_022124.2	2647	gtgggccaacaacagcaaaactgg	139969	533565	see also 8284 line	-	-
8290	CDH23	NM_022124.2	5051	accgtgacatcgggatcaacagt	139982	533587	-	-	-
							see also 8289 line	-	-

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8291	RBSK	NM_022128.1	88	ccgacctgtcagcttacttct	208524	768744	kinase_related	ribokinase	-
8292	GOLPH3	NM_022130.3	546	tggattacgtgckgtatgttaa	382405	687900	-	-	-
8293	GOLPH3	NM_022130.3	663	tccaacaggaggttctcttg	382412	687902	see also 8292 line	-	-
8294	GOLPH3	NM_022130.3	800	atgtacgggaacgattagctaaa	382417	687907	see also 8292 line	-	-
8295	GOLPH3	NM_022130.3	803	tacgggaacgattagctaaaaac	382418	687908	see also 8292 line	-	-
8296	CLSTN2	NM_022131.1	1415	tacatggtggagcaacataga	140793	546433	-	-	-
8297	CLSTN2	NM_022131.1	1423	tggagcaacatagaacataac	140794	546434	see also 8296 line	-	-
8298	SNX16	NM_022133.2	839	ttctccaaaacgctggtttaa	270610	681918	-	-	-
8299	SNX16	NM_022133.2	840	tcctccaaaacgctggtttaaag	270611	681919	see also 8298 line	-	-
8300	SAMSN1	NM_022136.2	591	gagctatttcattggaacatgaag	382437	553448	-	-	-
8301	SMOC1	NM_022137.2	708	cagataaaaacctcctgtatgttc	153078	554177	-	-	-
8302	SMOC1	NM_022137.2	1521	ggctgcctgggtgttagcaaga	153091	554194	see also 8301 line	-	-
8303	EPB41L4A	NM_022140.2	300	aagaaattttactgcgaatttg	279712	661188	-	structural molecule	-
8304	EPB41L4A	NM_022140.2	524	atcaacactggacctccatatac	279715	661194	see also 8303 line	-	-
8305	EPB41L4A	NM_022140.2	532	tggacctccatacttctgtatt	279718	661196	see also 8303 line	-	-
8306	EPB41L4A	NM_022140.2	534	gacctccatacttctgtattt	279719	661197	see also 8303 line	-	-
8307	EPB41L4A	NM_022140.2	1309	aagaaatggaagcaagactaac	279731	661218	see also 8303 line	-	-
8308	LRR04	NM_022143.3	1579	ctggtaccagcggcgatataac	382492	752573	-	-	-
8309	LRR04	NM_022143.3	2030	caccactatctggaacctata	382496	752578	see also 8308 line	-	-
8310	LRR04	NM_022143.3	2031	accactatctggaacctatata	382497	752579	see also 8308 line	-	-
8311	LRR04	NM_022143.3	2033	cactatctggaacctatataa	382498	752580	see also 8308 line	-	-
8312	LRR04	NM_022143.3	2037	atctggaacctataataa	382499	752581	see also 8308 line	-	-
8313	TNMD	NM_022144.1	738	ttagatcaatccactcctaata	328002	691278	-	-	-
8314	TNMD	NM_022144.1	739	tggatcaatccactcctaatac	328003	691279	see also 8313 line	-	-
8315	RRAGC	NM_022157.2	519	aagtaaccacagacatgaattt	173721	570435	gpcr, apoptosis, transcription_regulat or,	-	-
8316	RRAGC	NM_022157.2	1088	ttccactgttccgaaagctat	173740	570449	see also 8315 line	-	-
8317	FN3K	NM_022158.2	597	gtgaagatcccgatctgtttg	218618	606531	kinase_related	transferase	-
8318	CARD15	NM_022162.1	1214	acctgacggtctcgttaacc	75194	497107	apoptosis	apoptosis regulator	arthritis(関節炎)
8319	CARD15	NM_022162.1	1217	ctgacggtctcgttaaccttt	75195	497108	see also 8318 line	-	-
8320	XYLT2	NM_022167.1	1876	gtccagcgtgcacctgtattct	210706	599578	-	-	-
8321	XYLT2	NM_022167.1	1880	agcgtcacctgtattctatga	210707	599580	see also 8320 line	-	-
8322	MDA5	NM_022168.2	1078	accatgggaagtgttcagatga	64116	480529	-	-	melanoma(メラノーマ)
8323	MDA5	NM_022168.2	1144	ctcagacctaccacaaatgaagt	64118	480530	see also 8322 line	-	-
8324	MDA5	NM_022168.2	2762	atgattccgagaagaatgatg	64155	480582	see also 8322 line	-	-
8325	MDA5	NM_022168.2	2767	ttccgagagaagaatgatataa	64156	480583	see also 8322 line	-	-
8326	ABCG4	NM_022169.2	1343	tagagatggcggtcttcagagg	71159	493002	-	ATP-binding cassette (ABC) transporter	-
8327	TIA1	NM_022173.1	477	agcacagcgtctccaaagatca	47745	475839	apoptosis	poly(A) binding	-
8328	ICA1	NM_022307.1	837	aagttataaacatatagaattt	323802	701207	-	-	diabetes(糖尿病)
8329	ICA1	NM_022307.1	838	aggtataaacatatagaattt	323803	701208	see also 8328 line	-	-
8330	ICA1	NM_022307.1	1087	accatagatgaactattagaca	323816	701219	see also 8328 line	-	-



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8331	RAB38	NM_022337.1	501	ttcgttaggatgtttgaaacatc	110242	513026	signal transduction	protein transporter	-
8332	ZFVVE20	NM_022340.1	251	gagaggttgatcctacatgtgg	161383	555387	-	-	-
8333	ZFVVE20	NM_022340.1	336	tagaattgaccactatgtgtgg	161384	555388	see also 8332 line	-	-
8334	ZFVVE20	NM_022340.1	996	aagtaagaagatttaaaccttgg	161404	555402	see also 8332 line	-	-
8335	KIF9	NM_022342.2	993	tggctcgtgagacaacatctat	87853	506098	-	motor	-
8336	KIF9	NM_022342.2	995	gtcctcgtgacaaacatctatgg	87854	506099	see also 8335 line	-	-
8337	IFRG15	NM_022347.1	40	cagtggttccttagtttagaact	382626	712420	-	-	-
8338	IFRG15	NM_022347.1	42	gtgttcctccttagtttagaactag	382627	712421	see also 8337 line	-	-
8339	IFRG15	NM_022347.1	67	cactgtgttgacaaactgaact	382630	712422	see also 8337 line	-	-
8340	IFRG15	NM_022347.1	171	tgctaataagaacctgtgtcttc	382637	712424	see also 8337 line	-	-
8341	IFRG15	NM_022347.1	272	tggctcctcactggttagaaaa	382639	712426	see also 8337 line	-	-
8342	EFCBP1	NM_022351.2	586	agcactggaagacctgaactttt	142769	542731	-	-	-
8343	OSGEP1	NM_022353.1	1267	gtcctctggagtagacataca	184293	732515	-	-	-
8344	LEPRE1	NM_022356.2	776	ctggagaggccctatgaactag	222438	609826	-	-	-
8345	POPCD3	NM_022361.3	1119	tggcagtgacattgcagataaac	283068	694810	-	-	-
8346	DNAJC1	NM_022365.2	254	gagcggagacccctggagttttg	25253	458416	-	-	-
8347	DNAJC1	NM_022365.2	356	agcatatcgttaagcttctactaa	25255	458417	see also 8346 line	-	-
8348	DNAJC1	NM_022365.2	467	acgaaggcagaggttatgatgata	25258	458424	see also 8346 line	-	-
8349	DNAJC1	NM_022365.2	514	ggcgacagcctgtattctactac	25259	458427	see also 8346 line	-	-
8350	DNAJC1	NM_022365.2	794	tgtgttttgccttaactaanaag	25272	458435	see also 8346 line	-	-
8351	FLJ12287	NM_022367.2	944	gacagccagcaggttgactctt	3733	637533	receptor activity	receptor	-
8352	FLJ22313	NM_022373.3	723	aactaaaaagcactctactaac	382754	710669	-	-	-
8353	FLJ22313	NM_022373.3	848	gagtaoatattggttctactagt	382758	710673	see also 8352 line	-	-
8354	FLJ22313	NM_022373.3	1513	tgtcgttttatcattgtaataag	382780	710693	see also 8352 line	-	-
8355	ARL6IP2	NM_022374.1	1452	cggctatgtttgctatgtatata	108609	519018	-	-	-
8356	ABCG8	NM_022437.2	902	agcctcgtcctgacatcttcagg	71206	493077	-	ATP-binding cassette (ABC) transporter	Sitosterolemia(-), atherosclerosis(粥状硬化症)
8357	ABCG8	NM_022437.2	1292	cgtgatccctgctcagatttcc	71212	493084	see also 8356 line	-	-
8358	SLC13A1	NM_022444.3	1617	tagcaaatccaccacaatgctatt	257282	640893	-	-	-
8359	SLC13A1	NM_022444.3	1664	gtcattgacatgggttaagctgg	257284	640895	see also 8358 line	-	-
8360	AD24	NM_022451.9	985	aggcctggtagccaatacaagt	382806	710973	-	-	-
8361	RNF25	NM_022453.2	492	gtgtcatcgtcctctatggttc	233353	617673	-	-	-
8362	NSD1	NM_022455.3	139	ttcggtaattggtcaatccaattt	33973	462937	transcription_regulat or	-	-
8363	NSD1	NM_022455.3	140	tcgtaattggtcaatccaattt	33974	462938	see also 8362 line	-	-
8364	NSD1	NM_022455.3	141	cggtaattggtcaatccaattt	33975	462939	see also 8362 line	-	-
8365	NSD1	NM_022455.3	147	tggtaatccaattttctgagc	33976	462940	see also 8362 line	-	-
8366	NSD1	NM_022455.3	167	agccaacttaattgggtgactatg	33977	462941	see also 8362 line	-	-
8367	NSD1	NM_022455.3	279	ggcctcatgatcaatgtagagt	33978	462945	see also 8362 line	-	-
8368	NSD1	NM_022455.3	2718	ttctgtcttagtcagaatcaca	34050	463017	see also 8362 line	-	-
8369	NSD1	NM_022455.3	4809	aggaatcatcctgtttttgtat	34108	463078	see also 8362 line	-	-
8370	NSD1	NM_022455.3	5087	tccttgcatcaatgtagatc	34114	463087	see also 8362 line	-	-
8371	NSD1	NM_022455.3	5100	tagtatcatctgccttaact	34115	463088	see also 8362 line	-	-

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8372	NSD1	NM_022455.3	5141	gccgaatcatgagcatgttaatt	34116	463089	see also 8362 line
8373	NSD1	NM_022455.3	5304	gccacactacaggagatgtct	34119	463094	see also 8362 line
8374	NSD1	NM_022455.3	5681	ttggcagggtacagatcttact	34132	463109	see also 8362 line
8375	NSD1	NM_022455.3	6690	ttgggagatccgtgagatgtgc	34158	463134	see also 8362 line
8376	COP1	NM_022457.4	1286	ttgacaggatgtgactatttt	382888	703636	-
8377	COP1	NM_022457.4	1422	ctgtatcagttggagtagttacc	382892	703641	see also 8376 line
8378	COP1	NM_022457.4	1426	atcagttggagtagttaccataa	382893	703642	see also 8376 line
8379	COP1	NM_022457.4	1428	cagttgagtagttaccataaga	382894	703643	see also 8376 line
8380	COP1	NM_022457.4	1466	gtgattatgaaggcactgtatt	382896	703645	see also 8376 line
8381	COP1	NM_022457.4	1542	ggggtgtggagttgacttta	382897	703649	see also 8376 line
8382	XPO4	NM_022459.3	256	aagtatgttcgggaacagattct	271663	653210	protein transporter
8383	XPO4	NM_022459.3	1573	tacctctagctgtagtactca	271703	653247	see also 8382 line
8384	XPO4	NM_022459.3	1802	cagatctcaactcatctactaagt	271708	653252	see also 8382 line
8385	XPO4	NM_022459.3	2070	aagagaagggaacacttagtaa	271714	653261	see also 8382 line
8386	XPO4	NM_022459.3	2072	gagaaagggaacacttagtaatt	271715	653262	see also 8382 line
8387	XPO4	NM_022459.3	3177	gtgtttgacacaggctgaattt	271757	653300	see also 8382 line
8388	XPO4	NM_022459.3	3362	ttagtgcctctttgtgtaaaa	271767	653305	see also 8382 line
8389	XPO4	NM_022459.3	3363	tgggtgctcctttgtgtaaat	271768	653306	see also 8382 line
8390	CHST8	NM_022467.3	1969	acgaactctactacatggattac	217303	605419	-
8391	WIG1	NM_022470.2	981	ctccaagtggccagttttactgc	55775	476008	-
8392	MPP5	NM_022474.2	1108	ttccacatattcaggcactttac	316853	681254	-
8393	MPP5	NM_022474.2	1160	atgcagcttagagccaccattacaga	316854	681256	see also 8392 line
8394	MPP5	NM_022474.2	1404	atgtcaatgaggtttttgacttg	316862	681261	see also 8392 line
8395	MPP5	NM_022474.2	2219	ctccggaattcagattgaaacc	316878	681289	see also 8392 line
8396	MPP5	NM_022474.2	2415	aagctatcaggaattgtctagg	316885	681295	see also 8392 line
8397	HHIP	NM_022475.1	1219	cagaggaacagcatataactact	383213	535736	-
8398	HHIP	NM_022475.1	1221	gaggaccagcatctactacttg	383214	535737	see also 8397 line
8399	HHIP	NM_022475.1	1222	aggaccagcatctactacttgg	383215	535738	see also 8397 line
8400	HHIP	NM_022475.1	1515	tgcattccatcccaattacaag	383221	535748	see also 8397 line
8401	NDRG3	NM_022477.2	768	tactgggccaaaatgatacaaa	236879	622288	-
8402	FLJ12587	NM_022480.2	231	ttcgcaagcactgcattgtcacc	131292	532635	-
8403	ARAP3	NM_022481.4	1997	cacgagttctggagtaattaga	21469	458750	signal transduction
8404	ARAP3	NM_022481.4	2549	gcccaggatattgtatcttgg	21481	458755	see also 8403 line
8405	ARAP3	NM_022481.4	4194	ctgggaatccgcagaagtgtaa	21495	458778	see also 8403 line
8406	ARAP3	NM_022481.4	4195	tgggaatccgcagaagtgtaaag	21496	458779	see also 8403 line
8407	ARAP3	NM_022481.4	4196	gggaatccgcagaagtgtaaagc	21497	458780	see also 8403 line
8408	ARAP3	NM_022481.4	4460	gaccctggcggaactacacacc	21500	458787	see also 8403 line
8409	ZNF336	NM_022482.3	161	ctgcacaccagcaagtttttaag	45280	542428	transcription_regulat
8410	ZNF336	NM_022482.3	1426	cacatgctgattattcataaag	45304	542450	or
8411	ZNF336	NM_022482.3	1499	ttgcttctaaggagtagtataaa	45307	542453	see also 8409 line
8412	APG3	NM_022488.3	170	cccggtcctcaaggaatcaaat	383430	724734	-
8413	APG3	NM_022488.3	274	gggctaaagggaagaagtgaag	383431	724735	Alzheimer disease(アルツハイマー病)
8414	APG3	NM_022488.3	425	cggatgtagtagatataatcaca	383435	724742	see also 8412 line

8415	APG3	NM_022488.3	428	atgggtagatatacatatcaaca	383436	724743	see also 8412 line
8416	APG3	NM_022488.3	772	atgagcaacggcgcctttaaca	383446	724751	see also 8412 line
8417	APG3	NM_022488.3	1006	ctgtcattccaacaataaataat	383451	724756	see also 8412 line
8418	APG3	NM_022488.3	1008	gtcaatccaacaataaataatga	383452	724757	see also 8412 line
8419	ACTR6	NM_022496.2	84	tggagcttaacaacgccaaatcgg	286378	720105	-
8420	DNMT3A	NM_022552.3	2675	atccactgtgaatgaagctgg	25452	458593	-
8421	ALDH8A1	NM_022568.2	1170	atgctccacaggtgataacaga	226366	613428	-
8422	NDST4	NM_022569.1	1682	ctggcactcaaggtgcaaat	217707	605753	-
8423	NDST4	NM_022569.1	1683	tggcactcaaggtgcaaat	217708	605754	see also 8422 line
8424	HOXC8	NM_022658.2	496	gaggcagcgtggtgcaatatcc	5191	444830	transcription regulat
8425	HOXC8	NM_022658.2	529	tcctccgcaacactaacaagag	5192	444831	or transcription factor
8426	HOXC8	NM_022658.2	555	aggacaaggccacttaaatcaaa	5193	444832	see also 8424 line
8427	ANAPC1	NM_022662.1	2415	atgttgagctcctatcttttgaac	383636	697650	-
8428	ANAPC1	NM_022662.1	5279	tactgggaactgctcatagatt	383675	697724	see also 8427 line
8429	NEUROD6	NM_022728.2	755	gactttacgactggccaaaaact	33777	462656	transcription regulat
8430	NEUROD6	NM_022728.2	1012	caggcatctgggaactcttgataat	33783	462665	or translation regulator
8431	NEUROD6	NM_022728.2	1013	aggcatctgggaactcttgataat	33784	462666	see also 8429 line
8432	NEUROD6	NM_022728.2	1019	tgggaactcttgataattccaagt	33788	462667	see also 8429 line
8433	NEUROD6	NM_022728.2	1136	tcctccccaataactataatg	33793	462673	see also 8429 line
8434	COPS7B	NM_022730.1	404	atctgagctggcactcaagaat	383740	781928	-
8435	COPS7B	NM_022730.1	478	cagggaactagaagaccttataca	383743	781930	see also 8434 line
8436	LOC64744	NM_022733.1	273	ctgacccagtggaactcaagaaca	31012	747545	-
8437	LOC64744	NM_022733.1	363	accttccggcgaactcagataga	31016	747547	see also 8436 line
8438	LOC64744	NM_022733.1	438	gacgaagtctggacatcaatgc	31020	747549	see also 8436 line
8439	LOC64744	NM_022733.1	574	cacagctacctcggaagaagctcc	31023	747553	see also 8436 line
8440	LOC64744	NM_022733.1	881	tggatccagacgcctcaaatgc	31028	747559	see also 8436 line
8441	ACBD3	NM_022735.3	1608	tactacagagctctattatactag	172436	569835	-
8442	FLJ14153	NM_022736.1	277	ctgctgtagctggtatcttgg	273510	655047	-
8443	FLJ14153	NM_022736.1	294	ttcttggcccaatgtagtttgg	273511	655048	see also 8442 line
8444	HIPK2	NM_022740.1	131	tggcctcaacatgicgaagtttc	84765	503489	transcription co-
8445	HIPK2	NM_022740.1	240	cggctccacacagcaagtgaca	84767	503490	repressor
8446	HIPK2	NM_022740.1	528	cacaagcagctgcagatcatcg	84771	503498	see also 8444 line
8447	HIPK2	NM_022740.1	1390	gggacaagaacaactaggtttt	84785	503507	see also 8444 line
8448	HIPK2	NM_022740.1	1766	gtcgggtgaatgatgacacg	84793	503516	see also 8444 line
8449	HIPK2	NM_022740.1	1928	atcccgagctctcactataaac	84795	503517	see also 8444 line
8450	HIPK2	NM_022740.1	1929	tccgaagtctcactataaac	84796	503518	see also 8444 line
8451	SMYD3	NM_022743.1	1174	cagcctgattgaagattgatttc	383848	728375	-
8452	FLJ13868	NM_022743.1	415	tggctctggaagattcaactgg	383852	757575	-
8453	FLJ13868	NM_022744.1	1298	tgtgtcccaagattcttgaac	383860	757583	see also 8452 line
8454	FLJ22059	NM_022752.2	2043	aggcccaacggcgtttaggt	324273	789197	-
8455	C20orf81	NM_022760.3	1796	ggactgattccacacatacaaac	383992	804032	-

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8456	G11orf1	NM_022761.1	185	gcgagcaccactaatgagaata	277415	713631	-	-
8457	FLJ22318	NM_022762.3	1337	cagatgggaacacatcatattc	384009	668461	-	-
8458	FAD104	NM_022763.2	293	ttcatgtccctccaggttatctc	243973	631142	-	-
8459	FAD104	NM_022763.2	296	atgtgcctccaggttatctc	243974	631143	see also 8458 line	-
8460	FAD104	NM_022763.2	2724	ctgggaagagccgtgcaataacg	244038	631192	see also 8458 line	-
8461	FAD104	NM_022763.2	2886	tggaaccatttagtcagttcatca	244046	631204	see also 8458 line	-
8462	FLJ12085	NM_022771.3	42	gtgagcgggaagatttatatga	384032	717992	-	-
8463	FLJ12085	NM_022771.3	44	gagcgggaagatttatatgaac	384033	717993	see also 8462 line	-
8464	FLJ12085	NM_022771.3	176	gagaccattggatgacattag	384039	718000	see also 8462 line	-
8465	FLJ12085	NM_022771.3	1816	ttgatgtgaagatactactctgc	384089	718054	see also 8462 line	-
8466	OSBPL11	NM_022776.3	560	agctggcgtgttgaggactcttg	303425	672204	-	-
8467	OSBPL11	NM_022776.3	1091	ggcaactatgaactgcttaaatg	303444	672225	see also 8466 line	-
8468	OSBPL11	NM_022776.3	1593	gagtactacctaccctcattca	303452	672236	see also 8466 line	-
8469	DKFZP434							
	L0117	NM_022778.2	1473	gtcaaaaggtcgtgataaacatat	384152	753227	receptor activity	-
8470	DKFZP434							
	L0117	NM_022778.2	1477	aagtcgtgtgataaacatatcaat	384153	753228	see also 8469 line	-
8471	FLJ13910	NM_022780.2	553	aaccttggaggagtaataataga	384171	715369	-	-
8472	FLJ13910	NM_022780.2	1114	ttcgtcagcaaacacagataac	384187	715387	see also 8471 line	-
8473	RNF38	NM_022781.3	580	atcgtctctctgcacataattcc	384195	786421	-	-
8474	RNF38	NM_022781.3	583	gtctgtctgcacataattccatt	384196	786422	see also 8473 line	-
8475	RNF38	NM_022781.3	669	gccttcacccctccgaatgatac	384199	786423	see also 8473 line	-
8476	RNF38	NM_022781.3	951	cagcacttaccagttaccatatgc	384205	786425	see also 8473 line	-
8477	FLJ12428	NM_022783.1	886	atcggaaatctaccagctttatg	315870	681541	-	-
8478	FLJ12428	NM_022783.1	887	tccgaaatctaccagctttatgt	315871	681542	see also 8477 line	-
8479	FLJ12428	NM_022783.1	1104	aggaaacattccagctgtttgg	315873	681545	see also 8477 line	-
8480	PPN	NM_022825.1	1363	tggatcttaccgctctcatagg	384270	539124	-	-
8481	AXOT	NM_022826.1	604	gtcaccgaagtggtgatttcaca	384287	710593	-	-
8482	AXOT	NM_022826.1	616	gtgatttcacacattcatcatat	384290	710595	see also 8481 line	-
8483	AXOT	NM_022826.1	621	ttcacacattcatcatatgtca	384291	710596	see also 8481 line	-
8484	AXOT	NM_022826.1	2120	acgtgtccgatttataaaccttg	384325	710643	see also 8481 line	-
8485	SLC13A3	NM_022829.3	1231	ctctcaagtggtggttgacttc	257304	640347	-	-
8486	SLC13A3	NM_022829.3	1646	tggaacattgctggtcaaaagaca	257311	640350	see also 8485 line	-
8487	USP46	NM_022832.2	237	ttcggatgggtcaattttggaaa	190015	581793	-	-
8488	USP46	NM_022832.2	416	tggcgtcatcccccacaaagaagt	190023	581798	see also 8487 line	-
8489	USP46	NM_022832.2	797	gtgtgtgaacaaaaataattatt	190033	581804	see also 8487 line	-
8490	FLJ22833	NM_022837.1	537	aacttaaatgtcgtctttatgt	384532	735404	-	-
8491	MRPS11	NM_022839.2	773	ctggaagtgtatcacaatcacaga	285914	658677	-	-
8492	FLJ23017	NM_022840.2	788	tgggtgtgtactgatacatcttt	27287	791012	-	-
8493	FLJ23017	NM_022840.2	789	gggtgtgtactggatcatcttc	27288	791013	see also 8492 line	-
8494	PCDH20	NM_022843.2	1360	gagatccaagaagtaataacaaag	149882	544612	-	-
8495	PCDH20	NM_022843.2	2443	atcgttactggtgaagtgagt	149909	544646	see also 8494 line	-
8496	PAPOLG	NM_022894.2	416	tgggtcttggtaaatgaacaat	53265	480681	polynucleotide adenylyltransferase	-

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8497	PAPOLG	NM_022894.2	419	ttctgttaaatgaacaattia	53266	480682	see also 8496 line
8498	PAPOLG	NM_022894.2	506	ttgtgttaaaattttcacattt	53269	480684	see also 8496 line
8499	PAPOLG	NM_022894.2	714	tggtatgaaattgatctgct	53273	480686	see also 8496 line
8500	PAPOLG	NM_022894.2	745	ctggcaatacaaacacatacaga	53274	480689	see also 8496 line
8501	PAPOLG	NM_022894.2	1123	gtctggatctctgggttaaatcc	53297	480708	see also 8496 line
8502	PAPOLG	NM_022894.2	1218	cacatcaactcgacagtaagtg	53304	480712	see also 8496 line
8503	PAPOLG	NM_022894.2	1221	atcaactgaacagtaagttag	53305	480713	see also 8496 line
8504	PAPOLG	NM_022894.2	1413	atctaaatccgtgactgttg	53313	480714	see also 8496 line
8505	PAPOLG	NM_022894.2	1438	aacttgaacaggaataatttat	53314	480716	see also 8496 line
8506	PAPOLG	NM_022894.2	1442	tggacgggaatgaattattact	53315	480717	see also 8496 line
8507	PAPOLG	NM_022894.2	2304	atctatgcctattccaactattg	53342	480747	see also 8496 line
8508	PAPOLG	NM_022894.2	2309	tgcctattccaactattgataca	53343	480749	see also 8496 line
8509	RANBP17	NM_022897.2	146	ctcagaacagtgcaactttatt	110478	652187	protein transporter -
8510	RANBP17	NM_022897.2	446	gtgaacactgcataataggagt	110484	652199	see also 8509 line
8511	RANBP17	NM_022897.2	1005	gtcgattttggctcgtttaag	110503	652210	see also 8509 line
8512	RANBP17	NM_022897.2	1598	cagcttatctttaattggatcac	110522	652233	see also 8509 line
8513	RANBP17	NM_022897.2	1673	ttgataoagtttcgtataaacata	110529	652237	see also 8509 line
8514	RANBP17	NM_022897.2	1674	tgatcagttttgtgtaaacata	110530	652238	see also 8509 line
8515	RANBP17	NM_022897.2	2165	ttgatcgggcctggcagagattct	110544	652250	see also 8509 line
8516	RANBP17	NM_022897.2	2554	cagctttggcgtcttccaagtgtg	110552	652261	see also 8509 line
8517	RANBP17	NM_022897.2	2573	ttgatggggacaaccatttga	110553	652262	see also 8509 line
8518	RANBP17	NM_022897.2	3000	gtcgaacacagtgctgaagtacc	110565	652268	see also 8509 line
8519	BCL11B	NM_022898.1	467	tgggggacatcctggttttata	384701	675287	transcription_regulat
8520	ACTR8	NM_022899.3	1182	ctgctttacagttctgattagg	286456	659204	or -
8521	CAS1	NM_022900.3	333	cgccgtaccaggagcaatgattc	218416	756042	-
8522	CAS1	NM_022900.3	334	gccgtaccaggagcaatgattcg	218417	756043	see also 8521 line
8523	CAS1	NM_022900.3	401	ttggcaacctcacagttgtatga	218418	756046	see also 8521 line
8524	CAS1	NM_022900.3	403	ggcaacctcacagttgtgtatg	218419	756047	see also 8521 line
8525	CAS1	NM_022900.3	413	cagttgtatgagcataaataca	218420	756048	see also 8521 line
8526	CAS1	NM_022900.3	709	ctgccacatgttccatcaagatt	218429	756057	see also 8521 line
8527	SLC30A5	NM_022902.2	1786	gggctgatagtaaaccttattgg	266865	653989	-
8528	SLC30A5	NM_022902.2	1789	ctgatagaaacctattgttat	266866	653990	see also 8527 line
8529	NDRG4	NM_022910.1	878	cactacgaccttctgaagatgg	310318	684303	-
8530	FLJ13110	NM_022912.1	324	ttgttttcattctattatgaac	384800	801757	-
8531	DKFZp761						-
8531	C169	NM_022913.1	1388	tcccgttctctagcagattttt	384813	734847	-
8532	DKFZp761						-
8532	C169	NM_022913.1	1389	ccggttctctagcagatttttc	384814	734848	see also 8531 line
8533	DKFZp761						-
8533	C169	NM_022913.1	1390	ccggttctctagcagattttcc	384815	734849	see also 8531 line
8534	DKFZp761						-
8534	C169	NM_022913.1	1933	tcctgttgacaaactaatcagc	384833	734877	see also 8531 line

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8535	DKFZp761 C169	NM_022913.1	2320	tccttaactgaggatgaatga	384848	734892	see also 8531 line	-	-
8536	FLJ22104	NM_022918.2	557	tacattttcgacttagttca	384907	691473	-	molecular_function unknown	-
8537	TM6SF1	NM_023003.1	1010	atgctagaactgcttatgtctac	284832	693494	-	-	-
8538	FLJ21919	NM_023015.3	847	tgcccaagcccaagaagtgtacc	384986	757061	-	-	-
8539	FLJ21919	NM_023015.3	1263	ttcgggaacgggttcattgaatgt	384994	757071	see also 8538 line	-	-
8540	FLJ21919	NM_023015.3	2112	agcatgagagttgtctatgaat	385022	757095	see also 8538 line	-	-
8541	FLJ21919	NM_023015.3	2496	ctctgtacctaatatttagaac	385028	757101	see also 8538 line	-	-
8542	FLJ21919	NM_023015.3	2602	tggctaccacctgtctactacc	385032	757104	see also 8538 line	-	-
8543	FLJ21919	NM_023015.3	2919	ttctcaaatctactattcagagc	385038	757108	see also 8538 line	-	-
8544	FLJ21919	NM_023015.3	3452	ttctccctggcggaggaaatga	385043	757113	see also 8538 line	-	-
8545	13CDNA73	NM_023037.1	1138	tggfcccaactggcgaatgac	67625	780538	-	-	-
8546	13CDNA73	NM_023037.1	1729	tgggtttacatgattcgaatta	67642	780548	see also 8545 line	-	-
8547	13CDNA73	NM_023037.1	9362	ctgggacagcagggtactatgc	67842	804256	see also 8545 line	-	-
8548	FLJ13855	NM_023079.2	375	tactgtgacatgaactaagattc	228872	616007	-	-	-
8549	FLJ13855	NM_023079.2	485	accacacctgggtcaaacgtgatg	228874	616008	see also 8548 line	-	-
8550	FLJ13855	NM_023079.2	486	cccacctcgggtcaaacgtgatga	228875	616009	see also 8548 line	-	-
8551	FLJ13855	NM_023079.2	491	ctcgggtcaaacgtgatgaacacg	228876	616010	see also 8548 line	-	-
8552	CAPN10	NM_023083.1	1232	caggaggtctgcgggaacacagc	187580	581345	-	-	diabetes mellitus(糖尿病)、diabetes(糖尿病)
8553	NS3TP2	NM_023927.1	1424	agcttacagctaacatagtgaag	385430	722953	-	-	-
8554	RINZF	NM_023929.2	2696	tgcctcattgtgtctatgtagc	135257	797645	-	-	-
8555	EBF	NM_024007.2	1031	tcggaagggtacccctcttatct	25683	458869	transcription_regulat or	-	-
8556	EBF	NM_024007.2	2015	aacagctgcgaagcgatatctgg	25696	458882	see also 8555 line	-	-
8557	HOXB4	NM_024015.2	496	tacccttgatgcgcaaatgcca	5120	444754	transcription_regulat or	transcription factor	-
8558	HOXB9	NM_024017.3	97	ctgggacgcttagcagctattat	5135	444770	transcription_regulat or	transcription factor	-
8559	HOXB9	NM_024017.3	98	tgggaagcttagcagctattatg	5136	444771	see also 8558 line	-	-
8560	HOXB9	NM_024017.3	150	gaagcgctccagcgcaagtttcc	5138	444773	see also 8558 line	-	-
8561	HOXB9	NM_024017.3	478	agggcaagcccgagtagcagtttg	5140	444774	see also 8558 line	-	-
8562	HOXB9	NM_024017.3	479	gggcaagcccgagtagcagtttg	5141	444775	see also 8558 line	-	-
8563	HOXB9	NM_024017.3	544	ccggctacggggacaataaatt	5150	444779	see also 8558 line	-	-
8564	HOXB9	NM_024017.3	545	cggctacggggacaataaattt	5151	444780	see also 8558 line	-	-
8565	HOXB9	NM_024017.3	546	ggctacggggacaataaatttg	5152	444781	see also 8558 line	-	-
8566	GDAP1L1	NM_024034.3	1118	ctgggtggatgggtacttttgc	385538	754743	-	-	-
8567	MGC2803	NM_024038.2	433	agccctcaagcagggaatagtag	385578	727130	-	-	-
8568	MGC2803	NM_024038.2	434	gcccctaagcagggaatagtagc	385579	727131	see also 8567 line	-	-
8569	MGC2803	NM_024038.2	473	gagatgaggtatttaacaaagtaa	385583	727132	see also 8567 line	-	-
8570	DDX50	NM_024045.1	566	aggtcaggggtaacatatctct	59384	483314	-	-	-
8571	DDX50	NM_024045.1	568	gtcagggggtaacatatctctt	59385	483315	see also 8570 line	-	-
8572	DDX50	NM_024045.1	569	tcagggggtaacatatctcttc	59386	483316	see also 8570 line	-	-
8573	DDX50	NM_024045.1	578	aacatatctcttcttattcaag	59387	483317	see also 8570 line	-	-

8574	DDX50	NM_024045.1	838	atgttggaacatcatcatcaaacg	59392	483324	see also 8570 line		
8575	DDX50	NM_024045.1	1100	gtgggtatacaaaagtgtcaaaaa	59402	483334	see also 8570 line		
8576	DDX50	NM_024045.1	1321	tggccatgaatcacacataaaa	59407	483341	see also 8570 line		
8577	DDX50	NM_024045.1	2070	ctctcagtcgacgacaaattacc	59423	483365	see also 8570 line		
8578	MGC8407	NM_024046.2	1017	ctgtcttgataagaacatacaag	91441	495865	kinase_related	-	
8579	MGC3048	NM_024052.3	844	ctccatagaggctactactacc	385647	718669	-	-	
8580	Nup37	NM_024057.2	626	tggacaatacgggtttttgattc	269534	851991	-	-	
8581	C7orf26	NM_024067.2	182	cgacagccaaagagactgaattcc	385712	778072	-	-	
8582	ALG8	NM_024079.2	211	tgttattatgaggcaacttoaga	213199	815897	-	transferase, transferring glycosyl groups	-
8583	ALG8	NM_024079.2	846	ttccgactcttcttcttcaaga	213224	815917	see also 8582 line		
8584	ALG8	NM_024079.2	848	cocgactcttcttcttcaagagg	213225	815918	see also 8582 line		
8585	ALG8	NM_024079.2	903	ctggcctttgtacaaatcttgg	213226	815919	see also 8582 line		
8586	TRPM8	NM_024080.3	1730	ctcttcatctggccacttctca	252242	638329	receptor activity	-	
8587	MGC3329	NM_024086.2	435	ctccgaagaggaaatgacatagg	385814	722455	-	-	
8588	ELOVL6	NM_024090.1	842	ttccgagctctccgggaagtggc	326448	603722	-	-	
8589	MGC5509	NM_024093.1	606	ttgtccctctgttgaactactcc	385970	748436	-	-	
8590	MAPKAP1	NM_024117.2	312	ttggacaactccaactatcattct	297377	795268	-	RAS interactor	-
8591	MAPKAP1	NM_024117.2	315	gacaatccaactatcatctatgc	297378	795269	see also 8590 line		
8592	MAPKAP1	NM_024117.2	327	atcatctagctcatctattagaca	297379	795271	see also 8590 line		
8593	MAPKAP1	NM_024117.2	378	atgtgtgagatggtttctcattga	297380	795272	see also 8590 line		
8594	MAPKAP1	NM_024117.2	549	cgctcaaacacagctcaaaagatt	297388	795280	see also 8590 line		
8595	MAPKAP1	NM_024117.2	983	cagtcactactgcctgcattatg	297400	795291	see also 8590 line		
8596	MAPKAP1	NM_024117.2	1324	tgtttagcagccaccattcaag	297410	795306	see also 8590 line		
8597	MAPKAP1	NM_024117.2	1335	caccattacaagctcattcaaaagt	297411	795308	see also 8590 line		
8598	MAPKAP1	NM_024117.2	1422	gagatagaccctgttacgaatca	297414	795310	see also 8590 line		
8599	MAPKAP1	NM_024117.2	1428	gacctgttacgaatcagaagaagc	297416	795311	see also 8590 line		
8600	MAPKAP1	NM_024117.2	1443	cagaaagccagcactaaagtgttg	297417	795312	see also 8590 line		
8601	MAPKAP1	NM_024117.2	1454	cactaagtttggattaagcaga	297420	795314	see also 8590 line		
8602	MAPKAP1	NM_024117.2	1627	ttgtgtcaaggttaactacatc	297427	795320	see also 8590 line		
8603	C20orf7	NM_024120.2	587	tggaggcgacacactctatgaac	386120	728083	-	-	
8604	C20orf7	NM_024120.2	590	aggcgacacactctatgaacttc	386121	728084	see also 8603 line		
8605	MGC3067	NM_024295.3	649	gggttatcttggattcaactat	386193	714915	-	-	
8606	MGC3067	NM_024295.3	779	atccacacactcagttttgtacc	386201	714916	see also 8605 line		
8607	MMP28	NM_024302.2	618	accacaaatggaggcgttaagaacg	158404	558919	-	-	
8608	PLEKHF1	NM_024310.2	814	tacggagcgccaggaatggattta	159104	554974	-	-	
8609	ET	NM_024311.2	338	tggaaatgtggcgcaaacctgtca	279758	801965	-	-	
8610	ET	NM_024311.2	355	ctgtcatcaggagcgttaaatagg	279759	801967	see also 8609 line		
8611	C20orf121	NM_024331.2	770	ttcccatcggataaaagcagt	273306	655495	-	-	
8612	MGC3222	NM_024334.1	634	accgagagattggccacacaaac	386307	735910	-	-	
8613	MGC10765	NM_024345.1	444	ccgatggacgaatgattttcttc	386356	768567	kinase_related	-	
8614	MGC10765	NM_024345.1	561	tcggtctctgtactctcataat	386357	768572	see also 8613 line		
8615	MGC10765	NM_024345.1	562	ccggtctctgtactctcataatg	386358	768573	see also 8613 line		

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8616	MGC10765	NM_024345.1	565	ttctctgtactctcataatgatg	386359	768574	see also 8613 line			
8617	NOTCH2	NM_024408.2	1902	atcacccgaatggctgaatgc	149157	538121	receptor activity, transcription_regulat			
8618	PLA2G4A	NM_024420.1	1785	cagtggtgctacatttaacctgc	199522	576934	cell cycle, signal_transduction	translation regulator		
8619	ATP10A	NM_024490.2	1034	gtcatctacgcaggaacatgaac	72363	494062	lysophospholipase			
8620	HIVEP3	NM_024503.1	5198	gccttgaaacttaccatggaacc	4890	701419	plasma membrane cation-transporting ATPase			
8621	HIVEP3	NM_024503.1	5696	atgtcagttggtgtatttaaac	4895	701426	see also 8620 line			
8622	HIVEP3	NM_024503.1	5703	ttggtctattttaaactacatta	4896	701427	see also 8620 line			
8623	HIVEP3	NM_024503.1	5767	tacgtctgtgtgtgcataagttt	4900	701428	see also 8620 line			
8624	HIVEP3	NM_024503.1	5775	ttggtgcataagttgtacaacc	4901	701432	see also 8620 line			
8625	GOC1	NM_024523.5	2138	ttcaggagaccgcacactgaaact	321449	686101				
8626	GOC1	NM_024523.5	2140	caggagaccgcacactgaaactgg	321450	686102	see also 8625 line			
8627	C1orf28	NM_024529.3	185	tagtgtctctgcacagtaacaaca	386716	759027				
8628	C1orf28	NM_024529.3	325	gagagactactacacattgattcc	386719	759032	see also 8627 line			
8629	C1orf28	NM_024529.3	445	aagatctacttggatctatcaat	386722	759042	see also 8627 line			
8630	C1orf28	NM_024529.3	600	gagtgatgcgccttgataaaga	386730	759047	see also 8627 line			
8631	C1orf28	NM_024529.3	602	gtgtgtgcgccttgataaagaga	386731	759048	see also 8627 line			
8632	C1orf28	NM_024529.3	604	gtgtgcgccttgataaagagaga	386732	759049	see also 8627 line			
8633	C1orf28	NM_024529.3	789	goccttaaacacagaggatttgt	386741	759054	see also 8627 line			
8634	RNF128	NM_024539.3	1169	cgcgcatactggatattcttca	191599	585141				
8635	FLJ13114	NM_024541.1	302	coccttatgtgaaacctattt	386925	812633				
8636	SAP130	NM_024545.2	2881	cagtgaagtcgggtcaaaagagg	387000	781806				
8637	C13orf7	NM_024546.2	1712	aacagcaagagcccttgataataa	387057	721083				
8638	C13orf7	NM_024546.2	1714	cagcaagagcccttgataataacg	387058	721084	see also 8637 line			
8639	C13orf7	NM_024546.2	1722	gcccttgataaacgggttttaag	387059	721085	see also 8637 line			
8640	FLJ23047	NM_024548.2	1090	aacagtaagtgtatcagttatt	387106	584299				
8641	FLJ20097	NM_024553.2	462	cagcctcttatgtaaaggaact	387181	715166				
8642	FLJ20097	NM_024553.2	563	tgcataaggaaggttttactcaag	387187	715169	see also 8641 line			
8643	FLJ21963	NM_024560.2	468	gggataagattgctatcatctat	236350	813907				
8644	FLJ22054	NM_024561.3	1601	atgtcttcgagcaaatatgataaa	387282	719471				
8645	FLJ21616	NM_024567.1	161	gccttgcaactaccaatcaaatg	3754	443785	transcription_regulat			
8646	FLJ21616	NM_024567.1	370	ttcttgcaatcggagatttcc	3758	443790	see also 8645 line			
8647	FLJ21616	NM_024567.1	805	aagtataattgtttgtctaac	3774	443801	see also 8645 line			
8648	FLJ13119	NM_024580.3	599	tacttcaaaagctctagaagaaa	57438	477259				
8649	OSBP19	NM_024586.3	862	tacagtcacagagttctctact	303784	672408				
8650	OSBP19	NM_024586.3	864	cagtcacagagttctctactcc	303785	672409	see also 8649 line			
8651	OSBP19	NM_024586.3	938	tcccaagagccttaagatttc	303788	672413	see also 8649 line			
8652	OSBP19	NM_024586.3	939	ccccaaagcgttaagattct	303789	672414	see also 8649 line			



8653	OSBPL9	NM_024586.3	1125	aggagcacaagagcgttatcatg	303797	672421	see also 8649 line
8654	OSBPL9	NM_024586.3	1187	aagtagtcttccaacgtttat	303801	672426	see also 8649 line
8655	OSBPL9	NM_024586.3	1308	tgttccaggttggaatgtgtac	303806	672434	see also 8649 line
8656	FLJ22386	NM_024589.1	354	ggcggatgtgaacctgaagatgc	387616	746972	-
8657	PANK3	NM_024594.2	566	cccaggacctgcctaatttacc	95638	511221	-
8658	PANK3	NM_024594.2	895	gtcattccaagacaactataa	95649	511230	see also 8657 line
8659	FLJ11588	NM_024603.1	879	cggagttacgggacactttcagt	387744	723420	-
8660	FLJ11588	NM_024603.1	906	aagcaatacgtgtcctattac	387745	723422	see also 8659 line
8661	FLJ11588	NM_024603.1	907	agcaatacgtgtcctattacc	387746	723423	see also 8659 line
8662	FLJ11588	NM_024603.1	937	tgcgcctgtcagcagaagtata	387747	723424	see also 8659 line
8663	FLJ11588	NM_024603.1	988	aaggggattgggttgatgagg	387749	723428	see also 8659 line
8664	FLJ21908	NM_024604.1	197	gagaattaccctctattcgaaa	387757	606373	-
8665	FLJ20896	NM_024605.2	478	agcctctcatgacctatgagta	387802	532191	-
8666	FLJ20896	NM_024605.2	479	gcctctcatgacctatgagttac	387803	532192	see also 8665 line
8667	HSPBP1	NM_024610.3	644	gtcatctgacctctatgtgt	387845	785532	-
8668	FLJ21308	NM_024615.2	2329	agcatatcattgtgtactcagg	388040	728750	-
8669	FLJ12604	NM_024621.1	2374	acgtgttggtctcagtgaaaca	388116	734309	-
8670	FLJ12604	NM_024621.1	2795	tagaagagtgtaaccacatctgt	388123	734320	see also 8669 line
8671	SMC6L1	NM_024624.2	1212	atgcacgagcaccagaatgtatg	100856	515003	-
8672	ZDHHC14	NM_024630.2	1580	gtgaattcagagcacaacaaatcg	388289	759975	-
8673	FLJ23342	NM_024631.1	1514	agccattgatacccttaaat	388323	761347	-
8674	FLJ23342	NM_024631.1	1515	gccattgatacccttaaat	388324	761348	see also 8673 line
8675	GALNT12	NM_024642.1	454	ctctctggacagtttacagtgt	218714	777581	-
8676	C14orf169	NM_024644.1	1416	gcccgagacttcagtaataca	388487	713888	-
8677	FLJ13842	NM_024645.1	543	gtatgtgcattctccctataaag	51678	472971	-
8678	FLJ13842	NM_024645.1	547	tcgaatctccctataaagaaga	51681	472972	see also 8677 line
8679	FLJ22329	NM_024656.2	548	tgtcatcgtcagacaagaagag	303177	671492	-
8680	FLJ22329	NM_024656.2	1322	acctgcgttttgagatctcttc	303182	671499	see also 8679 line
8681	ZWCC2	NM_024657.2	378	gagcctggccaatgtagaatatg	388609	489501	-
8682	ZWCC2	NM_024657.2	564	aggagtaattggagtcattgagt	388620	489507	see also 8681 line
8683	ZWCC2	NM_024657.2	573	tggagtcattgagtgcaattcc	388622	489508	see also 8681 line
8684	ZWCC2	NM_024657.2	577	gtcattgagtgcaattctctaaa	388623	489509	see also 8681 line
8685	ZWCC2	NM_024657.2	603	tgcctacaacaacaagactttg	388624	489511	see also 8681 line
8686	ZWCC2	NM_024657.2	604	gcctacaacaacaagactttga	388625	489512	see also 8681 line
8687	IPO4	NM_024658.2	1424	gccctacctccggagcttatgg	146763	651280	-
8688	IPO4	NM_024658.2	1429	accttcggagcttatggaatgc	146765	651281	see also 8687 line
8689	FLJ11753	NM_024659.2	1350	cagccctacatggttaattcagg	388697	777129	-
8690	FLJ10774	NM_024662.1	1739	tagagataccctcttttgcatacc	82671	602267	molecular_function unknown
8691	FLJ10774	NM_024662.1	2892	aaccggatcatccgcaagttgt	82683	602286	see also 8690 line
8692	FLJ10774	NM_024662.1	2894	ccggatcatccgcaagttgtga	82684	602287	see also 8690 line
8693	IRA1	NM_024665.2	243	ataggtcaactcttctgtatat	388734	742466	-
8694	IRA1	NM_024665.2	913	atctctagattggaatggaag	388755	742488	see also 8693 line

8695	SUV39H2	NM_024670.3	767	gtcccaatgagattgtacaaaa	19145	451350	transcription_regulat	-
8696	FLJ14103	NM_024689.1	236	tcctcgtctgtataaatgcaat	389307	786701	-	-
8697	FLJ21069	NM_024692.3	2205	tgggtgacaagcgtatttcacc	389374	741752	-	-
8698	ZFH4	NM_024721.2	231	acggatgagcgcaaaagtgaagc	13981	442102	-	-
8699	ZFH4	NM_024721.2	638	ttcatccctcggaaaccattta	13991	442114	see also 8698 line	-
8700	ZFH4	NM_024721.2	675	ttccaaatacctcagcattagc	13993	442115	see also 8698 line	-
8701	ZFH4	NM_024721.2	704	tggctcgtgttgacagatttcc	13994	442116	see also 8698 line	-
8702	ZFH4	NM_024721.2	714	ttgcacagtttcgtgtctatga	13995	442117	see also 8698 line	-
8703	ZFH4	NM_024721.2	992	atgcgtctcgcgcataatcacagg	14004	442120	see also 8698 line	-
8704	ZFH4	NM_024721.2	1114	atccaaacctccgggtttatgg	14008	442123	see also 8698 line	-
8705	ZFH4	NM_024721.2	1133	atggagcgttttcattgtgaaa	14009	442125	see also 8698 line	-
8706	ZFH4	NM_024721.2	1134	tggagcgttttcattgtgaaa	14010	442126	see also 8698 line	-
8707	ZFH4	NM_024721.2	1288	tagtgaacaccccaattacctct	14013	442129	see also 8698 line	-
8708	ZFH4	NM_024721.2	2140	tcctgtgtgagtttgtaactac	14038	442148	see also 8698 line	-
8709	ZFH4	NM_024721.2	2632	tcggagagcgtgtcaccttatctc	14048	442150	see also 8698 line	-
8710	ZFH4	NM_024721.2	2988	accacacagtggtgataaattacg	14059	442159	see also 8698 line	-
8711	ZFH4	NM_024721.2	4210	tcctgaattccagccttaaaa	14087	442179	see also 8698 line	-
8712	ZFH4	NM_024721.2	4461	aagcggaccttacccttttagaaa	14093	442181	see also 8698 line	-
8713	ZFH4	NM_024721.2	4463	ggggaccttacccttttagaaaag	14094	442183	see also 8698 line	-
8714	ZFH4	NM_024721.2	6872	cccccagcatttgacttgatta	14154	442238	see also 8698 line	-
8715	ZFH4	NM_024721.2	8038	caccaagcccttaataatcacoc	14177	442273	see also 8698 line	-
8716	ZFH4	NM_024721.2	10467	aagtcctggcgttaataatctttt	14240	442336	see also 8698 line	-
8717	C7orf10	NM_024728.1	1136	atcccaactgtgggaagatttcc	304744	672801	-	-
8718	DIBD1	NM_024740.1	977	atggacctgtcttttagttgaca	389793	749528	-	-
8719	DIBD1	NM_024740.1	1523	tgggaagaagagtgttatcgattt	389807	749540	see also 8718 line	-
8720	DIBD1	NM_024740.1	1524	gggaagaagagtgttatcgattt	389808	749541	see also 8718 line	-
8721	FLJ13063	NM_024742.1	997	ccctttggtagccattctcagt	131301	532659	-	-
8722	FLJ13063	NM_024742.1	1345	ctgtctgagcagctaagtctgg	131302	532661	see also 8721 line	-
8723	ALS2CR8	NM_024744.1	1355	taccctggctactgtgtaagtga	219205	442468	-	-
8724	ALS2CR8	NM_024744.1	2124	tcctatgggtacagaaatccttg	219224	442491	see also 8723 line	-
8725	SHCBP1	NM_024745.2	255	gogattgagagcctatcaagatt	389821	528994	-	-
8726	SHCBP1	NM_024745.2	261	cagaagcctatcaagattacattt	389822	528995	see also 8725 line	-
8727	SHCBP1	NM_024745.2	263	gagcctatcaagattacattt	389823	528996	see also 8725 line	-
8728	SHCBP1	NM_024745.2	361	cgggaagctctggcacactaatgt	389825	528998	see also 8725 line	-
8729	SHCBP1	NM_024745.2	363	ggcagctgtgcacactaatgtgt	389826	528999	see also 8725 line	-
8730	SHCBP1	NM_024745.2	365	cagctgtgcacactaatgtgttc	389827	529000	see also 8725 line	-
8731	SHCBP1	NM_024745.2	746	ttgttgacttacacaactctgttg	389834	529004	see also 8725 line	-
8732	FLJ13213	NM_024755.1	529	aagaacgggaacgcttacagaga	26958	454071	-	-
8733	FLJ13213	NM_024755.1	601	tgggaacgggaacgcttggaagg	26959	454074	see also 8732 line	-
8734	FLJ13213	NM_024755.1	620	aagggaacgcttctgtattgaac	26961	454075	see also 8732 line	-
8735	FLJ13213	NM_024755.1	621	agggaacgcttctgtattgaaca	26962	454076	see also 8732 line	-
8736	FLJ13213	NM_024755.1	778	atccttaactggagcgagataaaa	26968	454079	see also 8732 line	-
8737	FLJ13213	NM_024755.1	779	tccttactggagcgagataaaa	26969	454080	see also 8732 line	-

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8738	FLJ13213	NM_024755.1	785	ctggagcgagaataaaaagtgt	26970	454081	see also 8732 line	-
8739	FLJ13955	NM_024759.1	762	cagcaagaacagctacagtattac	390146	756597	-	-
8740	FLJ13955	NM_024759.1	763	agcaagaacagctacagtattacc	390147	756598	see also 8739 line	-
8741	C14orf161	NM_024764.1	1407	ttcaaacagctgtgctaatgtttc	390264	782462	-	-
8742	PIP5K2C	NM_024779.3	618	ttgtgatcgcaataatgttttagc	207671	597708	kinase_related	-
8743	PIP5K2C	NM_024779.3	697	agccagagataaagaaaagatta	207673	597712	see also 8742 line	-
8744	TMC5	NM_024780.3	2252	cacctattgtctaatcatca	390618	737183	-	-
8745	TMC5	NM_024780.3	2262	gtgctaataatcaacctatcttta	390619	737185	see also 8744 line	-
8746	ZBTB3	NM_024784.2	1632	cacatccgcaaggctcacaaatga	43878	531326	transcription_regulat	-
8747	RNF122	NM_024787.2	418	tggtgttaoagggtgtttctgtgg	390663	785695	-	-
8748	FLJ22624	NM_024808.2	144	atgcaataacacacagaactcc	390837	787250	-	-
8749	FLJ22624	NM_024808.2	374	ttctcgaatagataaagatgag	390845	787260	see also 8748 line	-
8750	FLJ12529	NM_024811.2	164	ttcaacaatacacagatcagattga	61334	479938	-	-
8751	FLJ12529	NM_024811.2	290	aacacaagaacccctgaattct	61335	479939	see also 8750 line	-
8752	FLJ12529	NM_024811.2	296	aagacccctgcaattctgtatc	61336	479940	see also 8750 line	-
8753	FLJ12529	NM_024811.2	638	gtcccaagaggagggaatacctcc	61342	479955	see also 8750 line	-
8754	FLJ12529	NM_024811.2	730	ctcatctgctgtgtgataaagc	61344	479960	see also 8750 line	-
8755	FLJ12529	NM_024811.2	1008	tggggcctccaccagatacttac	61347	479962	see also 8750 line	-
8756	FLJ12529	NM_024811.2	1125	agcgaacacagcaaatctccagc	61350	479966	see also 8750 line	-
8757	CBLL1	NM_024814.1	579	atcaacatcgccatagagagc	391022	750457	-	-
8758	CBLL1	NM_024814.1	848	atcggtcagtcaggaaaccttc	391025	750472	see also 8757 line	-
8759	CBLL1	NM_024814.1	849	tcggtcagtcaggaaacctcttcg	391026	750473	see also 8757 line	-
8760	CBLL1	NM_024814.1	854	cagtcaggaaacctctctatttt	391027	750474	see also 8757 line	-
8761	CBLL1	NM_024814.1	858	caggaaacctctctattttaaoc	391028	750476	see also 8757 line	-
8762	CBLL1	NM_024814.1	1109	aggtaactctctactctgtatata	391029	750482	see also 8757 line	-
8763	CBLL1	NM_024814.1	1199	tgccagatgccaccttatatga	391032	750485	see also 8757 line	-
8764	UBE1DC1	NM_024818.2	488	aggtagtgtagctgtgaaagc	220948	607946	-	-
8765	KIAA1608	NM_024820.1	471	ttcgggtctgcgcgttatcttc	391078	760452	-	-
8766	KIAA1608	NM_024820.1	472	tcgggtctgcgcgttatcttca	391079	760453	see also 8765 line	-
8767	KIAA1608	NM_024820.1	474	gggtctgcgcgttatcttcagg	391080	760454	see also 8765 line	-
8768	KIAA1608	NM_024820.1	954	tacatcataaggaaatcatttaag	391091	760466	see also 8765 line	-
8769	KIAA1608	NM_024820.1	955	acctataggaatccatttaagt	391092	760467	see also 8765 line	-
8770	KIAA1608	NM_024820.1	1528	atcatgcaaaaatgggaataaaa	391106	760482	see also 8765 line	-
8771	RIN3	NM_024832.3	2614	ggggagggttcttactatctgacc	297443	665923	-	-
8772	LZK1	NM_024835.1	466	atgtacatgggtccaaactaaat	391299	691027	-	-
8773	LZK1	NM_024835.1	492	atgatagatgctattccaaaag	391300	691028	see also 8772 line	-
8774	LZK1	NM_024835.1	499	atgctattccaaaagaagaag	391301	691030	see also 8772 line	-
8775	LZK1	NM_024835.1	666	caggttttgcaactgattgcaaaa	391306	691045	see also 8772 line	-
8776	LZK1	NM_024835.1	1391	gggtccctcaataaagaagaag	391324	691062	see also 8772 line	-
8777	LZK1	NM_024835.1	1832	gccttgattgagcattaggaaaa	391337	691073	see also 8772 line	-
8778	LZK1	NM_024835.1	1910	aggtgcaagagcttagttgaac	391339	691074	see also 8772 line	-
8779	LZK1	NM_024835.1	2118	ttgacaacgctggagcaaatga	391348	691084	see also 8772 line	-
8780	FLJ22002	NM_024838.3	1316	cagcttatgcctcatctttttgc	83198	495626	kinase_related	-

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8781	FLJ14154	NM_024845.1	219	gagtaaccagactaatggtatcg	215146	602203	-	-
8782	FLJ14154	NM_024845.1	635	cacatattctctcatcaacag	215153	602214	see also 8781 line	-
8783	TMC7	NM_024847.2	359	gcggagactaaggacattcaag	391368	774265	-	-
8784	E1F2C3	NM_024852.2	493	tggagaccgtagaccagtattatg	391434	769112	-	-
8785	E1F2C3	NM_024852.2	497	gaccgtagaccagtttatgagg	391435	769113	see also 8784 line	-
8786	E1F2C3	NM_024852.2	601	tggaaagatcgaccttcaagg	391438	769115	see also 8784 line	-
8787	E1F2C3	NM_024852.2	1377	cagatagacaaggagaattagc	391458	769136	see also 8784 line	-
8788	E1F2C3	NM_024852.2	2346	aagactatcaacctggaataacc	391487	769155	see also 8784 line	-
8789	E1F2C3	NM_024852.2	2539	tctcttcacactatcatgttt	391499	769161	see also 8784 line	-
8790	E1F2C3	NM_024852.2	2542	tccttcacactatcatgtttat	391500	769163	see also 8784 line	-
8791	E1F2C3	NM_024852.2	2785	tgcacagctgacagattcacc	391508	769166	see also 8784 line	-
8792	E1F2C3	NM_024852.2	2812	tacctagcgacacattgattcgc	391510	769168	see also 8784 line	-
8793	FLJ12785	NM_024855.2	644	aactgcaagcgcatcaacttgg	287320	659228	-	-
8794	FLJ13962	NM_024862.1	543	tagaatcatttggacatatatg	391547	750915	-	-
8795	FLJ13962	NM_024862.1	581	ttgggaaatttcgtaactgtaa	391549	750917	see also 8794 line	-
8796	FLJ13962	NM_024862.1	582	ttgggaaatttcgtaactgtaa	391550	750918	see also 8794 line	-
8797	FLJ13962	NM_024862.1	583	gggaaatttcgtaactgtaag	391551	750919	see also 8794 line	-
8798	FLJ13962	NM_024862.1	1327	tacacaaccatacaattggatc	395030	750945	see also 8794 line	-
8799	PKD1-like	NM_024874.3	1817	atggcatcaaccagctatggtgg	150692	544287	-	-
8800	SYNPO2L	NM_024875.1	252	ggcgcagagagcgaagaagtac	391611	679696	-	-
8801	DHDDS	NM_024887.1	187	accgtgcgtatgccagaagtgc	218587	606523	-	-
8802	DHDDS	NM_024887.1	968	aaggacacgcttgcacaaactct	218603	606529	see also 8801 line	-
8803	C6orf134	NM_024909.1	535	cacagatccacaggtgaacaaact	391969	734833	-	-
8804	FLJ23091	NM_024911.3	1128	atccgacagggcatctctatgc	392000	726083	-	-
8805	FLJ12687	NM_024917.4	2219	aagctgtaccctgtggtattgttc	180575	604254	-	-
8806	FLJ12687	NM_024917.4	2220	agctgtaccctgtggtattgttc	180576	604255	see also 8805 line	-
8807	NUP210	NM_024923.2	844	tgggtgggaacctccattcaactac	392213	707579	-	-
8808	FLJ12571	NM_024926.1	468	ttggctcacaaagttaataatga	392272	770955	-	-
8809	FLJ12571	NM_024926.1	470	ggctcacaaagttaataatgaga	392273	770956	see also 8808 line	-
8810	FLJ22559	NM_024928.3	239	ttctagcctttggcaaaactctac	61738	788504	-	-
8811	FLJ21918	NM_024939.1	225	ctcggacgagaccgacttaattcc	61681	480652	-	-
8812	FLJ21918	NM_024939.1	1360	atgctgggtaagcgatatactga	61698	480665	see also 8811 line	-
8813	FLJ13611	NM_024941.1	526	aaccttggatgtgaaacacaaa	392366	719853	-	-
8814	PHC3	NM_024947.2	2469	cacttagtcgttggaaatcgtaag	392537	769553	-	-
8815	PHC3	NM_024947.2	2562	tccttaggcagcttcccaattact	392542	769556	see also 8814 line	-
8816	FLJ13397	NM_024948.1	305	ctaggacacagggttggttta	145244	542829	-	-
8817	FLJ13397	NM_024948.1	1020	aaggttgggttctacttgaatc	145269	542849	see also 8816 line	-
8818	FLJ13397	NM_024948.1	1087	ccgtatttttggccaaggatag	145271	542850	see also 8816 line	-
8819	FLJ13397	NM_024948.1	1097	tggcaaggatatggcttattgtg	145272	542851	see also 8816 line	-
8820	FLJ13397	NM_024948.1	1379	tggattgaagcagtcacaaattata	145283	542858	see also 8816 line	-
8821	FLJ13397	NM_024948.1	1499	aaccaaatggccatacatattgagt	145287	542863	see also 8816 line	-
8822	FLJ13089	NM_024953.2	66	cggccattacagattatcttga	392598	778025	-	-
8823	FLJ13089	NM_024953.2	68	ggccattacagattatcttga	392599	778026	see also 8822 line	-
8824	FLJ13089	NM_024953.2	813	ttctatctgactatttctgattc	392629	778048	see also 8822 line	-

8825	FLJ23375	NM_024956.2	1172	ttgatacagacactcttagcttt	392721	595258	-	-
8826	PANK2	NM_024960.3	405	caggatttctcaaatagtgga	95605	769591	kinase_related	-
8827	PANK2	NM_024960.3	502	atggacggctcacagtgctattac	95606	769595	see also 8826 line	-
8828	PANK2	NM_024960.3	503	tgacggctcacagtgctattact	95607	769596	see also 8826 line	-
8829	TAIP-2	NM_024969.2	457	ttgttcacccgtactactctaa	311811	769269	apoptosis	-
8830	EPG1	NM_024996.5	785	tgagagactttggcagatgttc	57261	477524	-	-
8831	EPG1	NM_024996.5	1451	tcctgtcattccaatagcaatga	57289	477539	see also 8830 line	-
8832	ADAMTS2	NM_025003.2	1795	aggtgaaattcgcacatgtaa	392946	796234	-	-
8833	ADAMTS2	NM_025003.2	2458	gtgtgtgtgtgggtaattata	392968	796261	see also 8832 line	-
8834	ADAMTS2	NM_025003.2	2463	gtgtgtgggtaattatacaacc	392969	796262	see also 8832 line	-
8835	VCIP135	NM_025054.3	814	cggagacccctcctgtattgcag	393262	783880	signal_transduction	-
8836	VCIP135	NM_025054.3	1052	gagtgaggagacattataatga	393266	783888	see also 8835 line	-
8837	VCIP135	NM_025054.3	1860	acctaacagctgttaattgtgc	393292	783919	see also 8835 line	-
8838	VCIP135	NM_025054.3	1931	ttggatggagagacagactaatc	393295	783921	see also 8835 line	-
8839	VCIP135	NM_025054.3	2887	taactgtaaacgtgcacttaagg	393322	783946	see also 8835 line	-
8840	RPF1	NM_025065.5	676	gagcagtggttcgtcttcgtaaag	393452	729126	-	-
8841	RPF1	NM_025065.5	677	agcagtggttcgtcttcgtaaaga	393453	729127	see also 8840 line	-
8842	RPF1	NM_025065.5	679	cagtggttcgtcttcgtaaagaa	393454	729128	see also 8840 line	-
8843	FRAS1	NM_025074.2	1053	atgcattcaagaagaatgattatt	146282	649127	-	-
8844	FRAS1	NM_025074.2	7562	tgagggttggttcgtattgtgtg	146391	649244	see also 8843 line	-
8845	FRAS1	NM_025074.2	7563	gggggttggttcgtattgtgtgc	146392	649245	see also 8843 line	-
8846	FRAS1	NM_025074.2	7649	atgtgttcagcagcaatgtcttc	146393	649247	see also 8843 line	-
8847	FRAS1	NM_025074.2	8143	tgctacacagtcctcaatgcagc	146402	649253	see also 8843 line	-
8848	FRAS1	NM_025074.2	10642	aagccacagtcctcaatgcagagg	146465	649298	see also 8843 line	-
8849	NIF3L1BP	NM_025075.1	51	ccgtgaactgacgacgaagtata	393492	716315	-	-
8850	NIF3L1BP	NM_025075.1	53	gtgactgaacgaagaagtatacag	393493	716316	see also 8849 line	-
8851	NIF3L1BP	NM_025075.1	249	tagtatatgatgaatctcaga	393497	716325	see also 8849 line	-
8852	NIF3L1BP	NM_025075.1	556	tagtaacatccatgaactcagc	393504	716333	see also 8849 line	-
8853	TBDN100	NM_025085.2	740	atgctattgcttaccatttata	219052	602466	transcription_regulat	-
8854	TBDN100	NM_025085.2	741	tgctattgcttaccatttattag	219053	602467	or	-
8855	TBDN100	NM_025085.2	907	ttggaacatctttgacctatga	219060	602473	see also 8853 line	-
8856	TBDN100	NM_025085.2	1874	tagatacatgtggactatttaa	219090	602500	see also 8853 line	-
8857	TBDN100	NM_025085.2	2011	aagctgatacagcaaacatgtct	219098	602509	see also 8853 line	-
8858	TBDN100	NM_025085.2	2561	cagattataagctgcccataatgg	219112	602529	see also 8853 line	-
8859	FLJ21511	NM_025087.1	1204	gagggtgtcagctagagaaaga	393536	757362	-	-
8860	FLJ21106	NM_025097.1	1263	cagttgatacagcctcattata	393603	726223	-	-
8861	CCDC2	NM_025103.1	975	tgaggtccatcgagatcaaatg	393641	723926	-	-
8862	CCDC2	NM_025103.1	979	gtcccatcgagatcaaatgattg	393642	723927	see also 8861 line	-
8863	CCDC2	NM_025103.1	980	tcccatcgagatcaaatgattgc	393643	723928	see also 8861 line	-
8864	FLJ22865	NM_025109.3	2171	ctgtttaactcgggaacacatcc	83299	487996	-	-
8865	FLJ23263	NM_025115.1	1538	caggttggggatcctaactgtcc	393791	755105	-	-
8866	RNF34	NM_025126.2	150	ctgtgggctgctgaatgaagca	265777	466372	-	-
8867	PWDMP	NM_025132.2	846	ttggcaacattgtctctataat	393844	768838	-	-

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8868	FLJ12584	NM_025139.2	1052	ttggagagtgacccgttgaagc	393938	729722	-	-	-
8869	FLJ12584	NM_025139.2	1062	accgttgaagcctcttcttg	393939	729723	see also 8868 line		
8870	FLJ12584	NM_025139.2	1241	tacatggccaggctcatcaatgc	393941	729725	see also 8868 line		
8871	MAK3P	NM_025146.1	421	gaggttggcggagctagcaaaact	215160	602427	-	-	-
8872	RUFY1	NM_025158.2	1013	cagctgaacacagacgaattgc	159944	540190	-	-	-
8873	FLJ13386	NM_025180.2	1703	caggagatcacactatgttc	394232	812839	-	-	-
8874	FLJ11560	NM_025182.2	859	tgcacacacttgacactgattg	394289	777569	-	-	-
8875	Lin10	NM_025187.3	649	taccocatggagcaactgtaaaa	281309	757727	-	-	-
8876	Lin10	NM_025187.3	974	tccttccctcataaacaagttc	281319	757735	see also 8875 line		
8877	EPC1	NM_025209.2	353	tgcacgaataccgctcgatataaac	275827	729675	transcription_regulat	-	-
8878	EPC1	NM_025209.2	428	atcatcttcagcgggctattcca	275829	696362	see also 8877 line		
8879	EPC1	NM_025209.2	1568	taggggatgtgcgatagatagac	275864	696386	see also 8877 line		
8880	EPC1	NM_025209.2	1569	aggagatgtgcgatagatagact	275865	696387	see also 8877 line		
8881	EPC1	NM_025209.2	2594	gacataacctaggacttaagt	275900	696407	see also 8877 line		
8882	ADAM33	NM_025220.2	407	cccccaacacacggatcattgc	155058	556092	-	-	-
8883	KCNIP4	NM_025221.4	261	aactcgtctctctgtattcaaaa	147165	549165	channel	-	-
8884	KCNIP4	NM_025221.4	262	acgtcgtctctctgtattcaaaa	147166	549166	see also 8883 line		
8885	T3JAM	NM_025228.1	1407	caggacctacaagatacaactaaa	394479	694064	-	-	-
8886	DPCK	NM_025233.3	1343	aacagatatcttcataaagatg	80855	731290	kinase_related	-	-
8887	SLC19A3	NM_025243.2	1314	tgggtattcagaccatcagact	179772	573060	-	-	-
8888	MGC2776	NM_025265.2	1475	atcggaaaggccctccattttac	199093	815871	-	-	-
8889	ITH5	NM_030569.2	884	gtgcactactttgtctctaaaga	394653	774160	-	-	-
8890	THAP7	NM_030573.1	841	cggacctacatcagagatgaac	41945	452942	-	-	-
8891	STAR5	NM_030574.2	541	gaccaacctggtacacattctcc	173862	570546	-	-	-
8892	CYB5-M	NM_030579.1	319	atcatccgagtgaccttaaac	303906	717223	-	-	-
8893	CPEB1	NM_030594.2	1213	ttctcccccgaactataagaac	58799	482061	-	-	-
8894	CPEB1	NM_030594.2	1214	tcctcccccgaactataagaac	58800	482062	see also 8893 line		
8895	CPEB1	NM_030594.2	1474	cagatggcctcgtggaattatt	58806	482066	see also 8893 line		
8896	CPEB1	NM_030594.2	1735	ctggctgtgactttcaataac	58814	482072	see also 8893 line		
8897	CPEB1	NM_030594.2	1736	tggctgtgactttcaataac	58815	482073	see also 8893 line		
8898	DICER1	NM_030621.2	283	aagaagcaattcatgataacatt	48224	471821	-	-	-
8899	DICER1	NM_030621.2	613	agcacaggtttcattatgact	48235	471830	see also 8898 line		
8900	DICER1	NM_030621.2	657	ttgaaaaatggttacttactact	48240	471833	see also 8898 line		
8901	DICER1	NM_030621.2	669	tacttatactgtcagacattaa	48241	471834	see also 8898 line		
8902	DICER1	NM_030621.2	1689	gaggtacttagaatttcgagc	48274	471863	see also 8898 line		
8903	DICER1	NM_030621.2	3003	cagctcatcagtttatgtagc	48328	471898	see also 8898 line		
8904	DICER1	NM_030621.2	3040	atcttaccacactcagtaaat	48329	471899	see also 8898 line		
8905	DICER1	NM_030621.2	3046	ccccactagtaatttcctcc	48331	471900	see also 8898 line		
8906	DICER1	NM_030621.2	3463	tagacttcgggtggaaaaaatct	48345	471911	see also 8898 line		
8907	DICER1	NM_030621.2	3735	gcctaatggcagttatgattagc	48359	471924	see also 8898 line		
8908	DICER1	NM_030621.2	5279	tgtttaccagcgttagaattcc	48405	471959	see also 8898 line		
8909	DICER1	NM_030621.2	5325	ctcatacccaagcaccttatga	48406	471960	see also 8898 line		
8910	CPEB4	NM_030627.1	2701	gtgaccgccctcggcatattcca	58896	482184	-	-	-

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8911	CPEB4	NM_030627.1	2703	gaccgcctcggcgcatttcatt	58897	482185	see also 8910 line	
8912	CPEB4	NM_030627.1	2704	accgcctcggcgcatttcatttc	58898	482186	see also 8910 line	
8913	CPEB4	NM_030627.1	2705	cgcgcctcggcgcatttcattcc	58899	482187	see also 8910 line	
8914	KIAA1701	NM_030639.1	1043	atgttatgggaactggtttgg	394778	812108	-	
8915	KIAA1701	NM_030639.1	1527	gtcaactcgtgctccttttc	394797	812126	see also 8914 line	
8916	KIAA1701	NM_030639.1	1530	aactactgctcctttttcata	394798	812127	see also 8914 line	
8917	DUSP16	NM_030640.1	640	atgagatgattggaaactcaaat	195551	534880	-	
8918	DUSP16	NM_030640.1	642	ggagatgattggaaactcaaatgt	195552	534881	see also 8917 line	
8919	DUSP16	NM_030640.1	727	ggcatttgggaatacaataca	195554	534885	see also 8917 line	
8920	DUSP16	NM_030640.1	800	aaggtgcaacagagcaaaagtgt	195555	534924	see also 8917 line	
8921	SET7	NM_030648.1	974	tgggacctatactgtgtct	213643	603842	-	
8922	KIAA1715	NM_030650.1	510	atgaagcattggatgatttaaaa	394833	728200	-	
8923	KIAA1715	NM_030650.1	1080	ttcagatgctcactgttttttc	394846	728214	see also 8922 line	
8924	TCF8	NM_030751.2	1915	aagatgcaagctggacagatttc	13010	449917	transcription_regulat	zinc binding
8925	TCF1	NM_030752.1	857	tggcaactgtgtccaatgttatt	102209	516018	-	chaperone
8926	TCF1	NM_030752.1	863	ctgtgccaatgtatttctaacc	102211	516019	see also 8925 line	
8927	WNT3	NM_030753.3	175	tcctcgtcgtctaccaccaatttg	255471	639613	-	signal transducer
8928	WNT3	NM_030753.3	286	tgcctcttgcgcgaattaccatc	255474	639614	see also 8927 line	
8929	WNT3	NM_030753.3	296	cgcgaattacatgagatcatgc	255475	639616	see also 8927 line	
8930	WNT3	NM_030753.3	948	tacgagaaactccccaaactttg	255482	639624	see also 8927 line	
8931	WNT3	NM_030753.3	1006	gggaccggaactgcaatgtcacc	255484	639628	see also 8927 line	
8932	TXNDC	NM_030755.3	429	gactaagaaggacttcataaact	265891	649862	-	
8933	TCF7L2	NM_030756.1	510	ctcgcctcgtcctcgaagtcttc	394866	468916	transcription_regulat	transcription
8934	TCF7L2	NM_030756.1	511	tcgcctcgtcgcgaagtcttc	394867	468917	or,	factor-7-like-2
8935	TCF7L2	NM_030756.1	607	tcgcctcgtcgccttcctcatga	394870	468921	see also 8933 line	
8936	TCF7L2	NM_030756.1	998	ccccatcgcctagatggttagt	394880	468927	see also 8933 line	
8937	TCF7L2	NM_030756.1	1691	aagtgcgttcgctacatacaagg	394889	468934	see also 8933 line	
8938	BHLHB3	NM_030762.1	198	ctggaactattcctctttgtatat	1520	456377	transcription_regulat	transcription factor
8939	BHLHB3	NM_030762.1	199	tggactattcctctttgtatatg	1521	456378	or	
8940	BHLHB3	NM_030762.1	274	taccgcacagattaatagaaaag	1524	456383	see also 8938 line	
8941	BHLHB3	NM_030762.1	275	accgcacagattaatagaaaaga	1525	456384	see also 8938 line	
8942	BHLHB3	NM_030762.1	548	cgccaaagaagtcttgcataacc	1532	456396	see also 8938 line	
8943	ILKAP	NM_030768.2	549	ccctcattactcgggtttcatat	166133	620666	phosphatase,	
8944	MFTC	NM_030780.2	229	tcgcctcgcactcgtgaagatcc	180798	773067	kinase-related,	
8945	CCR9	NM_030782.2	831	ctgcagcagttcgggttttcaga	394973	759723	signal transduction	folate transporter
8946	PTDSS2	NM_030783.1	508	aagctaaagaagcggccatttcc	303085	598919	-	
8947	GPR63	NM_030784.1	925	caggcttatgtgatttgatttc	240190	625094	gpcr,	rhodopsin-like
							receptor_activity,	receptor
							signal transduction	

8948	HM13	NM_030789.2	376	gggtctaccctctttttcaaat	191399	584859	-	-	-
8949	HM13	NM_030789.2	479	gccccctcatgaataagttttt	191400	584863	see also 8948 line	-	-
8950	TDRD3	NM_030794.1	408	gactctaaccacacagttcttgg	66527	486709	-	-	-
8951	APG16L	NM_030803.5	988	tgaggccctcttgattctatca	395211	532049	-	-	-
8952	C1orf21	NM_030806.2	584	tgaagagggtcaaatatacgaag	395217	810877	-	-	-
8953	NDEL1	NM_030808.2	293	agctcgggagtgagctgttgat	395225	714163	-	-	-
8954	NDEL1	NM_030808.2	584	aaggcacaataagtttcaactgg	395240	714171	see also 8953 line	-	-
8955	NDEL1	NM_030808.2	630	caggccattgaacgaatgcatt	395243	714172	see also 8953 line	-	-
8956	NDEL1	NM_030808.2	938	tgtatgatatcagcactaaca	395247	714175	see also 8953 line	-	-
8957	SKD3	NM_030813.3	1719	gagttctggacggagatcaatga	100450	514680	-	-	-
8958	CTNNBL1	NM_030877.3	1356	agcgagcccgcttctgaataaa	324095	690204	apoptosis	-	-
8959	CTNNBL1	NM_030877.3	1357	gcggaccggctctgaataaat	324096	690205	see also 8958 line	-	-
8960	TRIM8	NM_030912.1	11	tggcggagaattggaagaactgc	160715	541617	-	zinc binding	-
8961	TRIM8	NM_030912.1	1631	ggcagcagtcacacacacactac	160719	541629	see also 8960 line	-	-
8962	LBH	NM_030915.1	317	ccgcaaggatggccttctctacc	395381	741239	-	-	-
8963	ANP32E	NM_030920.2	979	gggctctcactacttaataagaag	294316	713042	phosphatase	-	-
8964	ITM2C	NM_030926.3	373	cgcagctggcccgagataacttc	326677	504591	-	-	-
8965	DC-	NM_030927.1	278	tgggtggcgtggtgatttcacc	326384	758398	-	-	-
8966	UNC93B1	NM_030930.1	418	caactgtctcatcaggtgtttt	395537	708128	-	-	-
8967	DIAPH3	NM_030932.2	447	ttgtgattgaagagagatatgc	60019	483850	-	actin binding	-
8968	DIAPH3	NM_030932.2	1735	cggccacggctcagctgctattct	60050	483877	see also 8967 line	-	-
8969	DIAPH3	NM_030932.2	1746	cagtgctattcttttaagcttc	60051	483879	see also 8967 line	-	-
8970	DIAPH3	NM_030932.2	2169	tcctgaggaacttgatgacaaagt	60058	483884	see also 8967 line	-	-
8971	VMP1	NM_030938.2	262	cgcctacccttgctcagatttt	395598	739296	-	-	-
8972	C6orf62	NM_030939.2	883	ttggcctcgggaatgatatgaag	395639	715545	-	-	-
8973	C1QTNF3	NM_030945.1	142	gcctgtgcaagatgaatacatg	395656	695194	-	-	-
8974	C1QTNF3	NM_030945.1	610	aggaagtgatgtgtacttatg	395661	695203	see also 8973 line	-	-
8975	SLOC5A1	NM_030958.1	1695	ttgtgatattcccaatgtttact	274712	655629	-	-	-
8976	SLOC5A1	NM_030958.1	1731	ttccacctgacacacagaagaaag	274713	655632	see also 8975 line	-	-
8977	SLOC5A1	NM_030958.1	1732	ttccacctgacacacagaagaaag	274714	655633	see also 8975 line	-	-
8978	SLOC5A1	NM_030958.1	1887	cagctgtcaggatcttaagcaac	274717	655635	see also 8975 line	-	-
8979	SLOC5A1	NM_030958.1	1985	aagttcatagagtcacagtttg	274720	655636	see also 8975 line	-	-
8980	CMT4B2	NM_030962.1	988	tggatggaggcactttaaat	395731	643114	-	-	-
8981	CMT4B2	NM_030962.1	1957	ctctacagagttgtcaagtta	395766	643138	see also 8980 line	-	-
8982	CMT4B2	NM_030962.1	1962	cagattgttcaagtttagaaga	395767	643139	see also 8980 line	-	-
8983	RNF146	NM_030963.2	875	atggactcgcaggaagattaaag	395883	725708	-	-	-
8984	RNF146	NM_030963.2	876	tggcgtcgcaggaagattaaag	395884	725709	see also 8983 line	-	-
8985	RNF146	NM_030963.2	889	aagattacgcagagataataga	395885	725711	see also 8983 line	-	-
8986	RNF146	NM_030963.2	895	aagcgagataatagatatacc	395886	725712	see also 8983 line	-	-
8987	ARPC5L	NM_030978.1	497	aggaggaactaggctccattataa	395921	736391	-	-	-
8988	FLJ12525	NM_031206.2	430	ttgtcaggtttgtgaattttat	395924	767547	-	-	-
8989	FLJ12525	NM_031206.2	431	tggtcaggtttgtgaattttat	395925	767548	see also 8988 line	-	-



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8990	QTR1	NM_031209.1	452	cgctgggctcggagacatcatcg	212696	601459	-	transferase, transferring	-
8991	SIC25A28	NM_031212.2	1488	gccatcgcatgctgtgtatga	181232	574431	-	glycosyl groups	-
8992	SEC13L	NM_031216.2	266	aagacacatagtgatctgtatg	395976	732590	-		-
8993	SEC13L	NM_031216.2	682	cgcaatggccaaggttcagatt	395991	732599	see also 8992 line		-
	DKFZP434								
8994	G2226	NM_031217.2	907	ttgtagaaggacacaataataat	78313	505127	-		-
	DKFZP434								
8995	G2226	NM_031217.2	1102	atgacacataaacactcttaag	78322	505131	see also 8994 line		-
8996	TEX15	NM_031271.2	1780	gtgtgtagctcctaaatgctgc	396059	743007	-		-
8997	TEX15	NM_031271.2	2878	tcccaaggacgaattaaaacatt	396088	743032	see also 8996 line		-
8998	TEX15	NM_031271.2	6027	gagatgtacagatcacttagaaa	396200	743136	see also 8996 line		-
8999	TEX14	NM_031272.2	1550	tactatgattgttaagtcagg	102449	516231	kinase_related	-	-
9000	TEX12	NM_031275.2	272	agcagcagtagatgcattctaca	396272	717890	-		-
9001	TEX12	NM_031275.2	274	cagcagtagatgcattctacatt	396273	717891	see also 9000 line		-
	DKFZP434								
9002	B195	NM_031284.3	415	ctgagcgtcttcagtgataag	60140	732653	kinase_related	-	-
9003	GSG1	NM_031289.1	563	cacccactctccgatttgagg	396512	700980	-		-
	DKFZP434								
9004	N1235	NM_031291.1	376	gcgtggcaattggcgaatgtta	180457	573396	-		-
	DKFZP434								
9005	N1235	NM_031291.1	378	gtggcaatttgcaaatgttatt	180458	573397	see also 9004 line		-
	DKFZP434								
9006	N1235	NM_031291.1	861	cagtagaagacgtatgatgatg	180478	573414	see also 9004 line		-
9007	RAB33B	NM_031296.1	922	ctgtctaaaccccaatgataat	110187	520038	signal transduction	protein transporter	-
9008	RAB33B	NM_031296.1	923	tgtctaaaccccaatgataatg	110188	520039	see also 9007 line		-
	DKFZP564								
9009	B1023	NM_031306.1	488	gtgtcgttatggagagatatc	60355	478191	-		-
	DKFZP564								
9010	B1023	NM_031306.1	489	tggctcgttatggagagatatct	60356	478192	see also 9009 line		-
	DKFZP564								
9011	B1023	NM_031306.1	1121	atgttaaggttatcatagcaacc	60381	478200	see also 9009 line		-
9012	FKSG32	NM_031307.2	402	cagacagacatcccaactacc	396665	713204	-		-
9013	FKSG32	NM_031307.2	964	atggagaagccagagattatga	396688	713226	see also 9012 line		-
9014	FKSG32	NM_031307.2	1389	acgaattggcaccaccacattat	396702	713243	see also 9012 line		-
9015	STK31	NM_031414.2	2571	tggatcacttcacagacaatg	66353	486448	kinase_related	-	-
9016	MARK4	NM_031417.2	992	cggagacaccagagagaattgagg	90326	508022	kinase_related	-	-
9017	CDCA1	NM_031423.2	448	gccgggtgaatgactttgagact	278222	713164	-		-
9018	COG3	NM_031431.2	777	ctggccaagttagatgattgat	268486	795851	-		-
9019	COG3	NM_031431.2	779	ggccaagttagatgattgataa	268487	795853	see also 9018 line		-
9020	COG3	NM_031431.2	787	tagatgatttaacatatatc	268489	795854	see also 9018 line		-
9021	COG3	NM_031431.2	1970	tgcctcattccacagaattca	268528	795883	see also 9018 line		-
9022	COG3	NM_031431.2	2013	gacctcaagaaaactagagatgc	268530	795885	see also 9018 line		-

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9023	COG3	NM_031431.2	2087	tagcaacaatgccttgatagagt	268532	795889	see also 9018 line		
9024	DKFZP564								
9024	90422	NM_031435.1	618	tcgcctggtaggcgcaaaaatt	25134	718803	-	-	-
9025	DKFZP564								
9025	90422	NM_031435.1	619	cgcctggttaggcgcaaaaatt	25135	718804	see also 9024 line		
9026	DKFZP564								
9026	90422	NM_031435.1	620	gcctggttaggcgcaaaaattt	25136	718805	see also 9024 line		
9027	DKFZP564								
9027	90422	NM_031435.1	622	ctggttaggcgcaaaaattt	25137	718806	see also 9024 line		
9028	RASSF5	NM_031437.1	1013	cacttttaagcgagatacaag	315033	539601	signal_transduction	-	-
9029	SOX7	NM_031439.2	1053	gggacatggatcgcaatgaattc	40637	468039	or	DNA binding	-
9030	TM4SF10	NM_031442.2	722	ctggcctggggtgcaactatatt	397019	752652	-	-	-
9031	TM4SF10	NM_031442.2	723	tggcctggggtgcaactatatt	397020	752653	see also 9030 line		
9032	TM4SF10	NM_031442.2	725	gcctggggtgcaactatatttc	397021	752655	see also 9030 line		
9033	SELO	NM_031454.1	743	gacatgttatgatggaataatcc	227448	731368	-	-	-
9034	IBAL	NM_031458.1	1855	caccacatcatgagaataatca	277192	671012	-	-	-
9035	SESN2	NM_031459.3	677	cagctcctggcgccactacattg	306419	674287	cell_cycle	-	-
9036	SESN2	NM_031459.3	618	agctctggcgccactacattgc	306420	674288	see also 9035 line		
9037	SESN2	NM_031459.3	1547	ctgcctcttggcactacagatag	306424	674301	see also 9035 line		
9038	APG10L	NM_031482.3	818	atgtcaactatatacatcatcag	397198	532021	-	-	-
9039	L3MBTL2	NM_031488.3	482	gcctggtctgcacaaattggagc	113125	477697	transcription_regulat	-	-
9040	LONP	NM_031490.2	580	ctgtcctcagtgctaaattg	88754	488177	-	-	-
9041	LONP	NM_031490.2	1009	atgtctgactgaaatttattg	88770	488196	see also 9040 line		
9042	ENAM	NM_031889.1	411	atgccccgaatgcctggatttag	289639	660048	-	structural constituent of tooth enamel	amelogenesis imperfecta(エナメル質形成不全症)
9043	ENAM	NM_031889.1	412	tgcctccgaatgcctggatttagc	289640	660049	see also 9042 line		
9044	ENAM	NM_031889.1	415	cccgaatgcctggatttagcagt	289641	660050	see also 9042 line		
9045	CDH20	NM_031891.2	1224	tgaacaaccaatcacagatcatt	139914	545679	-	calcium ion binding	-
9046	SH3KBP1	NM_031892.1	1097	aggattactgcaaaagtataatt	322110	711262	-	-	-
9047	CACNG8	NM_031895.4	543	cggcctcccgctctacaagtcc	261642	645291	channel	voltage-gated calcium channel	-
9048	CACNG7	NM_031896.3	273	gacgaaacacacggagaaatttc	261629	747014	channel	voltage-gated calcium channel	-
9049	GORASP1	NM_031899.2	227	tggcactcagagctgaacaagg	397231	737502	-	-	-
9050	CIQTNF4	NM_031909.1	1115	cagcaaccacacggcgaagtacatca	397252	721946	-	-	-
9051	CIQTNF7	NM_031911.3	921	tccggggtccacagtcattctatc	397272	788916	-	-	-
9052	CSDFD1	NM_031919.1	350	tgaacaaggctcattagatataa	278862	691115	-	-	-
9053	REPS1	NM_031922.2	1382	tttgttaggcaatccagtagttat	151960	552909	-	-	-
9054	REPS1	NM_031922.2	1591	ttgacactggatgagttttgtgc	151968	552920	see also 9053 line		
9055	REPS1	NM_031922.2	1881	gacccaattgattataacattg	151979	552924	see also 9053 line		
9056	RAB34	NM_031934.3	974	agctcaagccatcatcattgtct	110203	520057	signal_transduction	protein transporter	-

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9057	RAB34	NM_031934.3	976	ctcaagccatcatcattgcttc	110204	520058	see also 9056 line		
9058	BCD02	NM_031938.1	820	tacatagcttggatgaagaag	224535	610957	-	growth factor	-
9059	B29	NM_031939.2	803	aggtgccaaagcttgcacaaaca	397412	730767	-	-	-
9060	NYD-SP12	NM_031955.2	676	tgccagctcttctctatagacaaa	397499	730133	-	-	-
9061	RASSF4	NM_032023.3	966	atgcccgtctctggacagctttgt	315027	679344	signal transduction	-	-
9062	CDA11	NM_032026.1	399	aagatactcaactcaaatatttt	397635	785843	-	-	-
9063	CDA11	NM_032026.1	403	tactcaactcaaatatttgaaga	397636	785844	see also 9062 line	-	-
9064	SSTK	NM_032037.1	268	cccggactctgtcaacaagtcc	101322	515391	kinase related	-	-
9065	SSTK	NM_032037.1	269	cccgactctgtcaacaagtcc	101323	515392	see also 9064 line	-	-
9066	NCALD	NM_032041.1	295	ggggatgcttccaaatttgcaga	118182	750731	-	-	-
9067	NCALD	NM_032041.1	351	tggagcaatagacttagagaat	118184	750732	see also 9066 line	-	-
9068	BRP1	NM_032043.1	1764	tagcagattgcagatgattata	23005	496401	-	-	ataxia telangiectasia(毛細血管拡張性運動失調)
9069	BRP1	NM_032043.1	2576	ctggccgtcagtggtatgaatt	23033	496425	see also 9068 line	-	-
9070	BRP1	NM_032043.1	2578	ggccgtcagtggtatgaattca	23034	496427	see also 9068 line	-	-
9071	KREMEN1	NM_032045.3	654	gcgctgcgggtgggaactactca	281164	667356	signal transduction	-	-
9072	KREMEN1	NM_032045.3	926	ttctctctgctgcacatca	281169	667361	see also 9071 line	-	-
9073	EMILIN2	NM_032048.1	3244	ctgctcactacagactttgatga	131048	755520	-	-	-
9074	OTP	NM_032109.2	216	acggggagggcgtgaagttagg	397757	447519	transcription_regulat or	-	-
9075	MGC2599	NM_032116.2	1028	tgccctaccacgatcttctattg	91257	508385	-	-	-
9076	FLJ12953	NM_032118.2	255	tggagtgagtcgccactatca	397781	714387	-	-	-
9077	FLJ12953	NM_032118.2	257	gagtgagtcgccactatcact	397782	714388	see also 9076 line	-	-
9078	DKFZP564	NM_032125.1	150	cccggtcactcagctggttttcc	264579	648851	-	-	-
9079	DKFZP566	NM_032127.1	1103	atcactgcctcgaaagattgagg	397928	815361	-	-	-
9080	DKFZP566	NM_032127.1	1177	cagcccttgcaactcttctatgagt	397930	815362	see also 9079 line	-	-
9081	DKFZP566	NM_032127.1	1180	cccttgcaactcttctatgagt	397931	815363	see also 9079 line	-	-
9082	DKFZP566	NM_032127.1	3084	gaggtcttctgagtgaaagatgc	397938	815379	see also 9079 line	-	-
9083	ARL6	NM_032146.3	590	ctgggaacacattataaagaag	108551	708938	signal transduction	-	-
9084	K0427	NM_032148.2	1084	tacacccattgctgctagttttg	266662	653764	-	-	-
9085	TREX1	NM_032166.2	1933	tgctgtacatgtacatcacatca	199326	778828	-	-	-
9086	FLJ12787	NM_032175.1	313	aggcctgcatactggaactttat	398492	804931	-	-	-
9087	FLJ12787	NM_032175.1	315	gcctgcatatcgaaactttatta	398493	804932	see also 9086 line	-	-
9088	FLJ12787	NM_032175.1	317	ctgcatatcgaaactttattaaa	398494	804933	see also 9086 line	-	-
9089	FLJ12787	NM_032175.1	318	tgcatacgaaactttattaaaag	398495	804934	see also 9086 line	-	-
9090	FLJ12787	NM_032175.1	323	atcgaaactttattaaaggaaaa	398496	804935	see also 9086 line	-	-
9091	KIAA0157	NM_032182.2	692	aagagtcgcgcagattgttgatc	398556	811153	-	GTPase activator	-
9092	KIAA0157	NM_032182.2	696	gtgagcgagtggttgatcttgt	398557	811154	see also 9091 line	-	-
9093	KIAA0157	NM_032182.2	698	gagcgagtggttgatcttgtca	398558	811155	see also 9091 line	-	-

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9094	KIAA0157	NM_032182.2	941	caccacaacaatcaagaagtlac	398562	811159	see also 9091 line	
9095	ASC1p100	NM_032204.3	200	aggcagaccgattttgttta	398643	738610	transcription_regulat or	-
9096	ASC1p100	NM_032204.3	314	tggccttgctcaccataaattc	398645	738615	see also 9095 line	
9097	ASC1p100	NM_032204.3	315	ggccttgctcaccataaattct	398646	738616	see also 9095 line	
9098	FLJ21742	NM_032207.1	1848	gagctgacacgaagtcattcc	398697	732912	-	-
9099	ANKRD17	NM_032217.3	1177	ttggaatccggtgctagtattga	15757	742565	-	-
9100	ANKRD17	NM_032217.3	1191	tagtattgaggaccataatgaaa	15759	742566	see also 9099 line	
9101	ANKRD17	NM_032217.3	1363	atggtcgattcttttggaaagc	15768	742573	see also 9099 line	
9102	ANKRD17	NM_032217.3	2088	tagaaccacagctaataatgacc	15785	742590	see also 9099 line	
9103	ANKRD17	NM_032217.3	2521	cagctccagagagacattga	15792	742601	see also 9099 line	
9104	ANKRD17	NM_032217.3	2545	gagctcaggaagaagttaacaga	15793	742603	see also 9099 line	
9105	ANKRD17	NM_032217.3	3029	cagggtccatcgcaaatcttaca	15804	742610	see also 9099 line	
9106	ANKRD17	NM_032217.3	3031	gggtccatcgcaaatcttaca	15805	742611	see also 9099 line	
9107	ANKRD17	NM_032217.3	3132	aacacacacagggtaattgtag	15806	742615	see also 9099 line	
9108	ANKRD17	NM_032217.3	3523	ctggacaaatggtgcagacatiga	15811	742618	see also 9099 line	
9109	ANKRD17	NM_032217.3	4316	aggtggctgctacttagtcaaaa	15827	742640	see also 9099 line	
9110	ANKRD17	NM_032217.3	4318	gtggtgcgtacttagtcaaaaga	15828	742641	see also 9099 line	
9111	ANKRD17	NM_032217.3	5913	gagccctgcagagactactaat	15863	742685	see also 9099 line	
9112	ANKRD17	NM_032217.3	6113	ttgtcacagttggaagacatcc	15867	742690	see also 9099 line	
9113	ANKRD17	NM_032217.3	6221	aagaacacatccagtatcatcc	15870	742693	see also 9099 line	
9114	ANKRD17	NM_032217.3	6770	tccagctacctcgacccttaagt	15877	742710	see also 9099 line	
9115	ANKRD17	NM_032217.3	6773	agctacottcgacccttaagtaca	15879	742711	see also 9099 line	
9116	ANKRD17	NM_032217.3	6869	ttggcccttagcacattgttt	15883	742713	see also 9099 line	
9117	ANKRD17	NM_032217.3	6870	tggcccttagcacattgttg	15884	742714	see also 9099 line	
9118	ANKRD17	NM_032217.3	7065	tccaagtcctcagggtattgtca	15892	742720	see also 9099 line	
9119	ANKRD17	NM_032217.3	7610	aagcaatggagcgagatagataca	15902	742734	see also 9099 line	
9120	CHD6	NM_032221.3	2189	ctgcagctatcctaaaccat	18414	450420	-	-
9121	CHD6	NM_032221.3	2648	tacacctatgagcgattgtg	18421	450432	see also 9120 line	
9122	CHD6	NM_032221.3	2698	agccatgacccggtctgtgaagc	18422	450433	see also 9120 line	
9123	FLJ22611	NM_032226.1	300	tgggtgctatgagactataaag	61763	479545	-	-
9124	FLJ22679	NM_032227.1	908	tggtcaccgaagtgaaattgaac	398736	796943	-	-
9125	FLJ22679	NM_032227.1	1051	atggctgggcccctgtgtaata	398737	796945	see also 9124 line	
9126	FLJ22679	NM_032227.1	1052	tggctgggcccctgtgtaatat	398738	796946	see also 9124 line	
9127	FLJ22875	NM_032231.3	771	aactatccggagccagaaaaagc	398908	726291	-	-
9128	FLJ23356	NM_032237.2	241	aacactaaaccttcaaaagtacc	83329	489177	kinase_related	-
9129	ZNF1	NM_032268.3	1258	ctgcctgcatctatcaaaaaa	399224	747080	-	-
9130	AD158	NM_032270.2	1131	taccttatctggctgttgaacc	399266	749035	-	-
9131	AD158	NM_032270.2	2285	ttccagatgaactctactctgc	399295	749050	see also 9130 line	
9132	MAF1	NM_032272.2	886	atgtgacatctacagctataacc	399304	727312	-	-
9133	DKFp761 B0514	NM_032289.1	1810	gaggctgctggagaaattct	399397	735512	-	-
9134	DKFp761 B0514	NM_032289.1	2184	tgcggctcctcagaaataagttg	399398	735518	see also 9133 line	

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9135	DKFZp761 B0514	NM_032289.1	2320	aagccggtatgagacctatatcc	399401	735522	see also 9133 line	
9136	DKFZp761 C121	NM_032290.1	409	ttgctaaatgttcttoatcatta	399413	750595	-	-
9137	DKFZp761 C121	NM_032290.1	410	tgctaaatgttctcatcatcaa	399414	750596	see also 9136 line	
9138	DKFZp761 C121	NM_032290.1	609	gacatcaatgttaaaagacaatgc	399423	750604	see also 9136 line	
9139	DKFZp761 D221	NM_032291.1	259	atggggcaccacaatggattttat	399444	754828	-	-
9140	DKFZp761 D221	NM_032291.1	260	tggggcaccaaatggattttatg	399445	754829	see also 9139 line	
9141	DKFZp761 D221	NM_032291.1	261	ggggcaccacaatggattttatgc	399446	754830	see also 9139 line	
9142	DKFZp761 D221	NM_032291.1	557	ccgggtgcaattaaaaggaaact	399454	754834	see also 9139 line	
9143	DKFZp761 D221	NM_032291.1	978	ccaagtctgtgtgtaataatgc	399467	754837	see also 9139 line	
9144	DKFZp761 D221	NM_032291.1	1993	atgccaatcaccaggaaatctgg	399493	754850	see also 9139 line	
9145	DKFZp761 J1523	NM_032293.3	666	gagatgttcagcaatgaattgg	297549	665006	-	-
9146	CAMK1	NM_032294.2	578	atggctcacaacgaagtgaaaga	75083	497064	kinase related	-
9147	SLC37A3	NM_032295.1	1095	ccgacaagctgtccatttggtac	274417	656896	-	-
9148	SLC37A3	NM_032295.1	1170	tggatgggttttttactttt	274423	656907	see also 9147 line	-
9149	SYT3	NM_032298.1	1779	tgcaactcagcgctctatgacttt	275119	657603	transporter	-
9150	MGC2714	NM_032299.2	826	atcaaatgctgtgtatgaaca	399528	740530	-	-
9151	MGC3200	NM_032305.1	320	gaggcagctcccctacttcacc	399604	728540	-	-
9152	PDIP46	NM_032311.3	1132	aagtgaacacctcacatgaatgg	64903	802153	-	-
9153	MGC11061	NM_032312.2	601	tggctcatgattataaccatt	399660	724945	-	-
9154	GMRP-1	NM_032320.3	370	ttgcatagtagacctctgaaact	131518	530677	-	-
9155	GMRP-1	NM_032320.3	1139	atgatgtgctcgtagacaattt	131528	530684	see also 9154 line	-
9156	GMRP-1	NM_032320.3	1143	tggctcgtagacaatttgaat	131529	530685	see also 9154 line	-
9157	GMRP-1	NM_032320.3	1145	gtcctcgtagacaatttgaatt	131530	530686	see also 9154 line	-
9158	GMRP-1	NM_032320.3	1146	tgctcgtagacaatttgaattt	131531	530687	see also 9154 line	-
9159	GMRP-1	NM_032320.3	1537	aagatcggcatgtagacttcca	131539	530688	see also 9154 line	-
9160	GMRP-1	NM_032320.3	1539	gagtcggcatgtagacttccagt	131540	530689	see also 9154 line	-
9161	GMRP-1	NM_032320.3	1547	atgtagactttcagttgttaag	131542	530690	see also 9154 line	-
9162	GMRP-1	NM_032320.3	1550	tgaacttcaagtgtgtaagagt	131543	530691	see also 9154 line	-
9163	ZDHC16	NM_032327.2	1067	gagtcgactagcatgcaaaagg	399760	714287	-	-
9164	MGC12458	NM_032328.1	435	atgtgtcgtctgcaatgatcc	148208	542813	-	-
9165	PHF6	NM_032335.1	942	aactgtacttcaggagattaaac	35053	453807	-	-
9166	MGC14799	NM_032336.1	281	agcaggctgagatgaataaaag	399790	715045	-	-
9167	MGC14799	NM_032336.1	796	caggacttgatccgatacaaac	399799	715052	see also 9166 line	-

9168	MG14799	NM_032336.1	797	agcacttgatcgcgatacaaac	399800	715053	see also 9166 line	
9169	MG3047	NM_032348.2	1241	gacatcagctagattcaaaaa	399865	715251	-	-
9170	MG13272	NM_032355.2	840	cagatggctacaagtagtattc	282002	666915	-	-
9171	MG13272	NM_032355.2	844	tggctacaaggttagtattcgtc	282003	666916	see also 9170 line	
9172	ACBD6	NM_032360.2	516	tgtctctatatactgaagaaa	172487	569848	-	-
9173	ACBD6	NM_032360.2	601	accaagcccatcaatcgaaaa	172489	569850	see also 9172 line	
9174	THOC3	NM_032361.1	747	ctgcatctgtatcaagtggacc	399985	735105	-	-
9175	MG16202	NM_032373.2	397	aggtgtggcaacccaagttcatga	400026	739367	-	-
9176	MG2562	NM_032374.2	156	aagttctgccatgtatggatagg	400047	725679	-	-
9177	SYTL2	NM_032379.2	1565	tgggttcaggcctgaagatctga	400092	540881	-	-
9178	EFQ2	NM_032380.3	1848	aagatcccaagttgaagtgagg	57363	477342	-	-
9179	PRKWNK4	NM_032387.2	531	tggccgataacctcaagtttgaca	97994	512546	kinase_related	-
9180	PRKWNK4	NM_032387.2	533	ggcgataacctcaagtttgacatc	97995	512547	see also 9179 line	
9181	PRKWNK4	NM_032387.2	534	ccgataacctcaagtttgacatcg	97996	512548	see also 9179 line	
9182	PRKWNK4	NM_032387.2	1254	ctgcatacgcacggataagaag	98001	512554	see also 9179 line	
9183	PRKWNK4	NM_032387.2	3065	ggcgattccaagtgacttcatcc	98021	512573	see also 9179 line	
9184	PINK1	NM_032409.1	488	gtcaggagatccaggcaattttt	96834	511875	kinase_related	-
9185	CARD11	NM_032415.2	898	aaggacgacacactacaacttagc	129599	677018	apoptosis	-
9186	CARD11	NM_032415.2	1973	ggcgagcagcatcatgtcaatc	129612	677028	see also 9185 line	
9187	HRD1	NM_032431.1	370	cacogtttttgggatgacttca	400222	735991	-	-
9188	HRD1	NM_032431.1	891	ggcgagcattccgaacatgaac	400227	736000	see also 9187 line	
9189	KIAA1796	NM_032439.1	794	tgcaggagcagcatgttaagttt	400298	802014	-	-
9190	KIAA1796	NM_032439.1	1050	ccccaatactactatatactttg	400304	802027	see also 9189 line	
9191	KIAA1796	NM_032439.1	1159	cagcgcttctcaactaaattc	400308	802035	see also 9189 line	
9192	KIAA1796	NM_032439.1	1160	agcgcttctcaactaaattc	400309	802036	see also 9189 line	
9193	KIAA1796	NM_032439.1	1198	tggactgtacagaagaagatgg	400311	802039	see also 9189 line	
9194	KIAA1796	NM_032439.1	1314	tgtctacagctcatgagttgt	400313	802042	see also 9189 line	
9195	MLR2	NM_032440.1	550	cagggaatgtccaacaattgc	400316	771919	-	-
9196	MLR2	NM_032440.1	635	accaagcctgcgaagcatct	400317	771922	see also 9195 line	
9197	MLR2	NM_032440.1	1316	aagttgaggaatggatctttct	400329	771942	see also 9195 line	
9198	MLR2	NM_032440.1	1319	tgcagggaatgatctttctgg	400330	771943	see also 9195 line	
9199	MLR2	NM_032440.1	1352	ctggtgacagctacagctatagc	400331	771945	see also 9195 line	
9200	MLR2	NM_032440.1	1365	cagctatagcttttgtaattgg	400332	771947	see also 9195 line	
9201	MLR2	NM_032440.1	1395	aacggagagcgcgttagtaaaa	400333	771948	see also 9195 line	
9202	MLR2	NM_032440.1	1396	acggagagcgcgttagtaaaaa	400334	771949	see also 9195 line	
9203	MLR2	NM_032440.1	1399	gagagcgcgttagtaaaaaatt	400335	771951	see also 9195 line	
9204	MLR2	NM_032440.1	1401	gagcgcttagtaaaaaattaa	400336	771952	see also 9195 line	
9205	MLR2	NM_032440.1	1402	agcgcttagtaaaaaattaa	400337	771953	see also 9195 line	
9206	MLR2	NM_032440.1	1403	ggcgcttagtaaaaaattaa	400338	771954	see also 9195 line	
9207	MLR2	NM_032440.1	1422	aaggctattcttccaaacaaa	400339	771955	see also 9195 line	
9208	MLR2	NM_032440.1	1575	agggcggtacagacagtaaca	400342	771957	see also 9195 line	
9209	MLR2	NM_032440.1	1577	ggcggttacagacagtaacagt	400343	771958	see also 9195 line	
9210	MLR2	NM_032440.1	1681	cacagtaactggagtaacagt	400345	771960	see also 9195 line	
9211	PHF6	NM_032458.1	1055	cagcctggctgactacttgatg	35060	453809	-	-

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9212	MRPL38	NM_032478.2	1403	gcggacattccgcacttttgatt	400356	714680	-	-	-
9213	DOT1L	NM_032482.1	730	atcgcaaacacagagtggtatt	25543	816774	or	-	-
9214	DOT1L	NM_032482.1	731	tcgcccaacacagagtggtatt	25544	816775	see also 9213 line	-	-
9215	DOT1L	NM_032482.1	732	cgccaacacagagtggtatt	25545	816776	see also 9213 line	-	-
9216	DOT1L	NM_032482.1	986	tcgacgcaccatactgaaac	25550	816782	see also 9213 line	-	-
9217	DOT1L	NM_032482.1	989	acgcaccatactgaaacat	25551	816783	see also 9213 line	-	-
9218	MGC3248	NM_032486.2	100	ggagcggcatctgggaacaaagt	400371	712032	-	-	-
9219	MGC3248	NM_032486.2	102	ggagcctctgggaacaaagtca	400372	712033	see also 9218 line	-	-
9220	GL009	NM_032492.2	335	aggtggccatgcccttctagtgg	400395	724330	-	-	-
9221	AP1M1	NM_032493.2	594	ggcatcaagtatcgggaagaatga	267495	650417	-	protein transporter	-
9222	ACAS2L	NM_032501.2	1485	tccttgctggagagatcaatga	232528	617446	-	-	-
9223	LOC84549	NM_032509.2	241	gggaacgggtccggcttagtaaa	63794	478778	-	-	-
9224	LOC84549	NM_032509.2	244	aacgggtccggcttagtaaaac	63795	478779	see also 9223 line	-	-
9225	LOC84549	NM_032509.2	245	acgggtccggcttagtaaaact	63796	478780	see also 9223 line	-	-
9226	LOC84549	NM_032509.2	247	gggtccggcttagtaaaactat	63797	478781	see also 9223 line	-	-
9227	LOC84549	NM_032509.2	249	gtccggcttagtaaaactatga	63798	478782	see also 9223 line	-	-
9228	LOC84549	NM_032509.2	251	ccggcttagtaaaactatgaga	63799	478783	see also 9223 line	-	-
9229	C6orf168	NM_032511.1	528	tcacgaactcctgtgcttagg	400480	786924	-	-	-
9230	C6orf168	NM_032511.1	593	cagttgcaagcctcaacaatgg	400482	786926	see also 9229 line	-	-
9231	C6orf168	NM_032511.1	754	ttctggcaacgaattcataatg	400487	786930	see also 9229 line	-	-
9232	CAB56184	NM_032520.2	238	tggtggagtcacagctacaagat	400545	775321	-	-	-
9233	CAB56184	NM_032520.2	655	ttgagtgatcgtggctactaaag	400548	775334	see also 9232 line	-	-
9234	MGC2629	NM_032522.2	327	ctgtgatattgtgtcaatgtgc	133864	534137	-	-	-
9235	MGC2629	NM_032522.2	451	gtcataaagaacacctactgttt	133868	534142	see also 9234 line	-	-
9236	MGC2629	NM_032522.2	565	atgcagcatattattagacaaatg	133871	534145	see also 9234 line	-	-
9237	OSBPL6	NM_032523.2	1271	aggctaactgtgtagatatctca	303597	672356	-	-	-
9238	KIRREL3	NM_032531.1	109	gacaagtttcggagaatgaatga	400550	723964	-	-	-
9239	KIRREL3	NM_032531.1	112	aagtttcggagaatgaatgaagg	400551	723965	see also 9238 line	-	-
9240	KIRREL3	NM_032531.1	1680	tgccgttcccgagagaaatctca	400564	723981	see also 9238 line	-	-
9241	KIRREL3	NM_032531.1	1914	caggtcaaacacctcaagaagc	400567	723987	see also 9238 line	-	-
9242	ABTB1	NM_032548.2	382	tgccggggcgggactactatga	128494	531575	-	-	-
9243	ABTB1	NM_032548.2	384	caggagggcgggactactatgacg	128495	531576	see also 9242 line	-	-
9244	IL1F10	NM_032556.4	432	tcgccatggcaagatactacata	167877	565050	-	-	-
9245	IL1F10	NM_032556.4	434	cccatggcaagatactacataat	167878	565052	see also 9244 line	-	-
9246	USP38	NM_032557.4	3611	tcacgttgcagactcgtatttt	189872	581896	-	-	-
9247	FLJ14753	NM_032558.1	451	ttcatagctatgtagagaattct	257938	642243	-	-	-
9248	DGAT2	NM_032564.2	683	gaccaccaggaaactatattttg	216209	602923	-	-	-
9249	DGAT2	NM_032564.2	1117	gccgatgggtccagagaagaattc	216216	602930	see also 9248 line	-	-
9250	N-PAG	NM_032569.2	81	ttggccagagaagaattgtaatc	33379	453613	-	-	-
9251	N-PAG	NM_032569.2	1654	gccgtgtaccggagcctacataca	33400	453635	see also 9250 line	-	-
9252	DRCTN1B 1A	NM_032581.2	1059	ttgctgtgtgtcgaataaaa	254391	745513	-	-	-

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9253	DRCTN1B	NM_032581.2	1060	tgctggttgtaataatgaataaag	254392	745514	see also 9252 line
9254	DRCTN1B	NM_032581.2	1116	aaggaaggtacaaggtgtattca	254396	745517	see also 9252 line
9255	DRCTN1B	NM_032581.2	1267	ctgaaggtgacgagggattttat	254401	745522	see also 9252 line
9256	DRCTN1B	NM_032581.2	1270	aagttgacgagggattttattcc	254402	745523	see also 9252 line
9257	PHACS	NM_032592.1	1631	ctgggtgacttgagaaagtacc	218292	606097	-
9258	LOXL3	NM_032603.2	1354	gggagagtcggggtgcaaatagg	163132	560846	scavenger receptor
9259	LOXL3	NM_032603.2	2120	atgtgaagccagggaaactacatt	163136	560851	see also 9258 line
9260	LOXL3	NM_032603.2	2122	gtgaagccagggaaactacattct	163137	560852	see also 9258 line
9261	LNX	NM_032622.1	1287	atctgattcaggccagtgaaga	316557	681119	-
9262	OSAP	NM_032623.2	231	cagtcagtcgtgattgatattat	401135	724308	-
9263	SSBP4	NM_032627.1	1330	ccggtcccgagcgaaagctact	19886	452008	transcription_regulat or
9264	PAPOLA	NM_032632.2	1003	tagcatcaactcttgtacataaa	53212	474806	transcription_regulat or
9265	PIGO	NM_032634.2	903	tgcaggaaggcggtagtattcca	205434	596212	-
9266	PIGO	NM_032634.2	1119	tggccctcaccacccgtgaatgg	205436	596213	see also 9265 line
9267	PIGO	NM_032634.2	2381	gtggtgagccaggaattttgtgg	205452	596233	see also 9265 line
9268	PIGO	NM_032634.2	2451	tggcttcgagcttgatgaattct	205454	596234	see also 9265 line
9269	PIGO	NM_032634.2	2459	tgcgctatgtatattctcaag	205455	596235	see also 9265 line
9270	PIGO	NM_032634.2	2460	tgcgctatgtatattctcaaga	205456	596236	see also 9265 line
9271	GATA2	NM_032638.3	854	accagccaccccaagaagtg	4420	444339	translation
9272	FOXPI	NM_032682.3	1420	agcatgcgtgagcagatagaagt	4199	444170	transcription factor
9273	FOXPI	NM_032682.3	1739	caggcgtactcagacaaataca	4205	444177	see also 9272 line
9274	FOXPI	NM_032682.3	1816	cagaagttagaccaccattaca	4207	444181	see also 9272 line
9275	FOXPI	NM_032682.3	2081	tggtaaccttcccttattaaaa	4214	444190	see also 9272 line
9276	FOXPI	NM_032682.3	2121	gcctactgcacacctctcaatgc	4215	444191	see also 9272 line
9277	MGC11332	NM_032718.2	937	cagtcagctgctactacagtaac	257995	642222	-
9278	RTN4IP1	NM_032730.2	466	tgcctatcactacattccaat	159893	559571	-
9279	RTN4IP1	NM_032730.2	507	cacgctgcagtgtaaatctctat	159895	559575	see also 9278 line
9280	RTN4IP1	NM_032730.2	1349	gggaagatccggccagttattg	159828	559599	see also 9278 line
9281	MINA53	NM_032778.3	982	agcactaccagaacacattcatg	401433	720059	-
9282	THSD2	NM_032784.2	283	atgcacttcgactgatttttg	401487	734174	-
9283	THSD2	NM_032784.2	537	tggaaactgatccagatataa	401494	734181	see also 9282 line
9284	THSD2	NM_032784.2	540	aactcgatccagatataaata	401495	734182	see also 9282 line
9285	AMID	NM_032797.4	395	tgcgaacaaagacattcttctc	224758	611097	apoptosis
9286	SPPL2A	NM_032802.2	1073	caggtggcttgattttacagg	191737	584637	-
9287	SPPL2A	NM_032802.2	1388	accagccctgttgattgcatact	191744	584644	see also 9286 line
9288	FBXO18	NM_032807.3	1123	gtgtgtgaacctacacacacac	234579	706032	-
9289	FBXO18	NM_032807.3	1466	taggattcactacaacattttct	234582	706039	see also 9288 line
9290	FBXO18	NM_032807.3	1492	gcctatatcttcaggagaattcc	234583	706040	see also 9288 line



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9291	FBXO18	NM_032807.3	2275	cgaccagcagatctatcttc	234604	706059	see also 9288 line
9292	FLJ14600	NM_032810.2	649	gagtgatagcaggttagatg	82973	489123	-
9293	FLJ14600	NM_032810.2	1382	gacctgaatggcaatgaaga	82990	489143	see also 9292 line
9294	SLC35B4	NM_032826.2	473	caccagctatcccaataaggtac	272173	711509	-
9295	SLC35B4	NM_032826.2	474	accagctatcccaataaggtat	272174	711510	see also 9294 line
9296	SLC35B4	NM_032826.2	1017	gtgttctacctctctcagaaca	272189	711526	see also 9294 line
9297	HATH6	NM_032827.3	865	ttctactctgcaatttcacacg	401731	770982	-
9298	HATH6	NM_032827.3	871	ctctgaatttcacacgtaatt	401732	770983	see also 9297 line
9299	HATH6	NM_032827.3	872	tcgtcaatttcacacgaattta	401733	770984	see also 9297 line
9300	PPP1R15B	NM_032833.1	2340	aagaagttactgagttattata	401863	748480	-
9301	PPP1R15B	NM_032833.1	2413	atgcaggttccagaacgaattc	401864	748481	see also 9300 line
9302	PPP1R15B	NM_032833.1	2414	tgcaaggtccagaacgaattca	401865	748482	see also 9300 line
9303	PPP1R15B	NM_032833.1	2416	caggttccagaacgaattcaag	401866	748483	see also 9300 line
9304	DIRC2	NM_032839.1	438	tgccctgtctcgttctctgttg	401886	770370	-
9305	FLJ14803	NM_032842.1	150	ggctggaatgatatatactgaaa	401926	802068	-
9306	FLJ14803	NM_032842.1	927	ggccccaatgtctacaagaagtg	401955	802090	see also 9305 line
9307	FLJ14803	NM_032842.1	1399	acctacottgattccagattacc	401970	802108	see also 9305 line
9308	FLJ14803	NM_032842.1	1653	aggaatctgtggagagtgtaac	401974	802123	see also 9305 line
9309	FLJ14813	NM_032844.1	537	aaccggacaatatgcttattct	83000	488814	kinase-related
9310	RAB2B	NM_032846.2	373	aaccacctgcctcatgtgttaga	110112	452900	signal_transduction
9311	FLJ14834	NM_032849.2	612	aactgccaactactgtgtattat	402008	729749	-
9312	FLJ14834	NM_032849.2	614	ctgaccaactactgtgtattata	402009	729750	see also 9311 line
9313	ZFYVE19	NM_032850.3	451	gtgtgaacacactcagaactata	161374	554951	-
9314	LACTB	NM_032857.2	657	ttctgtacacacagattactga	285484	658350	-
9315	LACTB	NM_032857.2	690	aagtggaaattcgtcattatgaaa	285487	658351	see also 9314 line
9316	LACTB	NM_032857.2	1124	aagaaaacagcagcagtgattac	285495	658364	see also 9314 line
9317	LACTB	NM_032857.2	1201	taactgtgatactctctataaatg	285498	658368	see also 9314 line
9318	FLJ14904	NM_032858.1	585	caggctgcaagtgattctagta	402105	787726	-
9319	FLJ14904	NM_032858.1	642	aaccaagaactgtgtacaaaa	402107	787729	see also 9318 line
9320	FLJ14904	NM_032858.1	976	ttcgtactgtcactgaattatct	402118	787744	see also 9318 line
9321	FLJ14904	NM_032858.1	1244	aggaattaccgcttactagaga	402128	787749	see also 9318 line
9322	C6orf93	NM_032860.3	500	ttcaggacctcagctgattttg	402140	806079	-
9323	C6orf93	NM_032860.3	1253	aggaatacctctcaatgtcttao	402160	806101	see also 9322 line
9324	FLJ14936	NM_032864.2	649	gagagagctctgtatcatctct	402180	777615	-
9325	CML66	NM_032869.2	529	atggagagattattttaaagaag	402286	721827	melanoma(メラノーマ), non-small-cell lung cancer(非小細胞肺癌)
9326	CML66	NM_032869.2	796	tggaaatgctcattgattgat	402299	721841	see also 9325 line
9327	CML66	NM_032869.2	1325	agctcagttatgcagatttga	402312	721862	see also 9325 line
9328	CML66	NM_032869.2	1591	ctcgtatgcagcccttcttgagt	402318	721869	see also 9325 line
9329	KIAA1959	NM_032873.2	1827	tgggttctggagagcattacc	236684	621056	-
9330	JUB	NM_032876.4	1732	caaccgactaccacaaaattatg	273698	701351	-
9331	MGC15730	NM_032880.2	452	cagctacactgacagtaacattg	402394	813532	receptor activity
9332	MGC15730	NM_032880.2	696	gaggtccgagatctcaagaattgg	402404	813535	see also 9331 line
9333	MGC15730	NM_032880.2	709	cagacaattggtccctctgagtc	402405	813536	see also 9331 line

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9334	COL27A1	NM_032888.2	663	gacgaggtcgtccacaaattact	288087	659404	-	-	-
9335	COL27A1	NM_032888.2	667	caggctgctcaaaattactgtac	288089	659405	see also 9334 line	-	-
9336	COL27A1	NM_032888.2	5012	acctcatcagcagcattaaagacg	288108	659423	see also 9334 line	-	-
9337	DISP1	NM_032890.2	1121	tagataattccaggatcagatct	264471	633009	-	-	-
9338	MGC14161	NM_032892.1	2086	togaacaattccactactcaatc	402456	476222	-	-	-
9339	MGC14161	NM_032892.1	2089	aacaattccactactcaatctt	402457	476223	see also 9338 line	-	-
9340	MGC14161	NM_032892.1	2122	ggcagatgttgcctgcacaaatc	402458	476224	see also 9338 line	-	-
9341	MGC14128	NM_032899.3	1004	gtgccaaagtcaggcaggaaatc	402474	784666	-	-	-
9342	SPF45	NM_032905.3	1223	cagtacggatatttttagaattt	66243	485809	-	rhodopsin-like receptor	-
9343	SPF45	NM_032905.3	1301	gtggacgggtggtaaaagcatgt	66245	485811	see also 9342 line	-	-
9344	MGC14156	NM_032906.2	336	ttgatggatccctaatatgata	402500	717283	-	-	-
9345	REG	NM_032918.1	367	ttctgaccaaaccggttctctgg	110620	520274	signal_transduction	-	-
9346	C7orf35	NM_032936.2	463	tgttacctcattgcgaatttact	402564	797111	-	-	-
9347	SYTL2	NM_032943.1	978	cagcttcagggtgattgatgt	402575	540825	-	-	-
9348	SYTL2	NM_032943.1	2090	atgccttccaaaagttctagaaga	402602	540853	see also 9347 line	-	-
9349	AXUD1	NM_033027.2	1736	tccaggctctgcagattatagt	311367	676918	apoptosis	-	-
9350	AXUD1	NM_033027.2	1738	caggctctgcagattatagt	311368	676919	see also 9349 line	-	-
9351	BOLL	NM_033030.3	620	aacattggctcagcaataagaaa	58201	479689	-	-	-
9352	BOLL	NM_033030.3	625	tgttcagcaataagaacaaac	58202	479690	see also 9351 line	-	-
9353	DMRTC2	NM_033052.1	237	caggcttcgaggtgcacaaatg	2752	443099	transcription_regulat or	-	-
9354	DMRTC2	NM_033052.1	242	ttgcgaggtgcacaaatgtctc	2753	443101	see also 9353 line	-	-
9355	HIA11	NM_033055.2	75	cggagcagcgcctcaaggaatag	257952	642265	-	-	-
9356	HIA11	NM_033055.2	198	tcttaaacatacatcttctgata	257957	642274	see also 9355 line	-	-
9357	Protein	NM_033102.1	1873	gggtctgctggccattactttg	403256	612771	-	-	-
9358	STN2	NM_033104.2	2558	atgcctcaactccattgtgtgg	305073	672946	-	-	-
9359	STN2	NM_033104.2	2771	acgtcaggaaagtggtcaattat	305081	672950	see also 9358 line	-	-
9360	STN2	NM_033104.2	2773	gtcaggaaagtggtcaattattc	305082	672951	see also 9358 line	-	-
9361	MADP-1	NM_033114.2	407	cagttattgtgtagatgataaa	63956	479071	-	-	-
9362	MADP-1	NM_033114.2	477	ggcgaactacttctgataaact	63961	479076	see also 9361 line	-	-
9363	NEK9	NM_033116.3	38	ggacactgcgattccatcaactcg	94733	510276	kinase_related, cell_cycle	-	-
9364	NEK9	NM_033116.3	598	ggcctagcaaaagaaactaatc	94747	510284	see also 9363 line	-	-
9365	NEK9	NM_033116.3	1041	atcacgaaccagtggaagtctata	94763	510294	see also 9363 line	-	-
9366	NEK9	NM_033116.3	1422	accatgcagctgaacttctcc	94773	510306	see also 9363 line	-	-
9367	NEK9	NM_033116.3	1669	gtgtgtgcctgtggactcaatga	94781	510310	see also 9363 line	-	-
9368	MGC2734	NM_033117.2	178	aggaaggacacccgattatgatt	64357	478551	-	-	-
9369	NKD1	NM_033119.3	1243	acggagcaagcaacttttgagg	149111	550821	-	-	-
9370	PLCZ1	NM_033123.2	1232	ggccttatctgactgtctcatt	151250	552483	-	-	-
9371	PLCZ1	NM_033123.2	1233	gccttatctgatttgcattta	151251	552484	see also 9370 line	-	-
9372	PLCZ1	NM_033123.2	1920	tgcatacaaaaaggattatgtcg	151277	552521	see also 9370 line	-	-
9373	RGPR	NM_033127.1	1404	tgcagatcgtggagaaatca	403519	744089	-	-	-
9374	RGPR	NM_033127.1	1959	cccttcttcagggtgataagc	403527	744097	see also 9373 line	-	-

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9375	RGPR	NM_033127.1	1962	ttcttccagggtgtataagctcc	403528	744098	see also 9373 line		
9376	ZIC5	NM_033132.2	346	aaccgcgcagcgtgagattagc	44021	712681	-	-	
9377	ZIC5	NM_033132.2	1224	cggctacggagcgcgtgaacttaa	44024	712682	see also 9376 line		
9378	BC008967	NM_033201.1	632	ctgatttctcgagaatcaagta	403575	753124	-	-	
9379	BC008967	NM_033201.1	657	acctatagacaagaagtaaccacaa	403576	753126	see also 9378 line		
9380	LOC90355	NM_033211.2	772	tggactacctcaatcatagataaa	403590	748505	-	-	
9381	GABRG3	NM_033223.1	1412	ctgggttgatcacctgtatctct	178776	571998	channel, receptor activity, signal_transduction	GABA-A receptor	-
9382	PURB	NM_033224.2	865	acgcacagaggagataagctttatg	403620	465069	-	-	
9383	CSMD1	NM_033225.1	10724	accccatgtgtatgatacaaaccta	202781	745807	-	-	
9384	ABCC12	NM_033226.1	1072	caccatcccgatcctcaatggtct	70122	492169	-	-	
9385	ABCC12	NM_033226.1	1488	ttgccatgttaatgtaatgaag	70142	492182	see also 9384 line	-	
9386	PML	NM_033238.1	2334	gacctactctggcggagaaacatga	9591	463696	transcription_regulat	or	leukemia(白血病)
9387	BOC	NM_033254.2	2889	cagcgacctgcccctatctgttg	22886	774826	-	-	
9388	BOC	NM_033254.2	2890	agcgacctgcccctatctgttg	22887	774827	see also 9387 line	-	
9389	SLC8A3	NM_033262.3	975	ttgccagggtcattgtctcttttt	122784	642616	-	-	
9390	SLC8A3	NM_033262.3	2639	cagaaagcgcctctgttatctcc	122807	642659	see also 9389 line	-	
9391	SLC8A3	NM_033262.3	2726	ttgggtgaacacccccaaactaga	122808	642660	see also 9389 line	-	
9392	KCNH7	NM_033272.2	1156	tgggtaccacatccagattcaaac	254528	644382	channel, signal_transduction	-	
9393	KCNH7	NM_033272.2	1920	tgggtatgcgattgggaatgaga	254551	644411	transcription_regulat	-	
9394	LOC90701	NM_033280.1	601	atgggtgcatatgtgttactaaa	191496	584596	see also 9392 line	peptidase	-
9395	LOC90701	NM_033280.1	602	tgggtcatatgtgttactaaa	191497	584597	see also 9394 line	-	
9396	TP53INP1	NM_033285.2	451	ttctgttgacttcattagatact	403666	676882	-	-	
9397	TP53INP1	NM_033285.2	673	cagggtgattaccactatcaag	403669	676884	see also 9396 line	-	
9398	TP53INP1	NM_033285.2	922	ttcgcccttccagtgagataaaa	403681	676890	see also 9396 line	-	
9399	TP53INP1	NM_033285.2	923	tcggccttccagtgagataaaa	403682	676891	see also 9396 line	-	
9400	SOX6	NM_033326.1	855	ctcgcctcatgcatcccaattttt	11804	468005	transcription_regulat	or	transcription factor
9401	SOX6	NM_033326.1	933	tcgccctctggaataaacatacaaa	11806	468008	see also 9400 line	-	
9402	SOX6	NM_033326.1	965	aactaccccgacagttcattcc	11808	468009	see also 9400 line	-	
9403	SOX6	NM_033326.1	1945	ctccaaacattagcaaaattttag	11826	468020	see also 9400 line	-	
9404	SOX6	NM_033326.1	1946	tcacaacattagcaaaattttag	11827	468021	see also 9400 line	-	
9405	SOX6	NM_033326.1	2209	cacaggaacacagttgtgtgtatc	11835	468025	see also 9400 line	-	
9406	CAPPA3	NM_033328.2	746	caggtgtgtcaaccttcatttg	113954	695710	structural constituent of cytoskeleton	-	
9407	CAPPA3	NM_033328.2	749	gtgtgtcaaccttcatttgaaa	113955	695712	see also 9406 line	-	
9408	CAPPA3	NM_033328.2	1033	gtgtgtgtgcaaccttggaataa	113972	695727	see also 9406 line	-	

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							transcription_regulat or	transcription factor	short stature, pituitary and cerebellar defects, and small sella turcica(低身長、下垂体および小 脳失調、小トルコ鞍)
9409	LHX4	NM_033343.2	1024	tggccacaccaataggatttatg	6162	445342			
9410	LHX4	NM_033343.2	1025	ggccacaccaatagatttatgg	6163	445343	see also 9409 line		
9411	LHX4	NM_033343.2	1058	gacttacacgcgcgacagttaat	6164	445344	see also 9409 line		
9412	LHX4	NM_033343.2	1059	acgttacaggcgacagttaatg	6165	445345	see also 9409 line		
9413	LHX4	NM_033343.2	1063	tacagcgcgcacagtttaataatg	6166	445346	see also 9409 line		
9414	AAT1	NM_033364.2	1950	gggagggagcagagatatattaag	403753	593464	-	-	-
9415	SSH2	NM_033389.2	278	ctgtaaagactggaaagctactac	195990	798239	phosphatase	-	-
9416	SSH2	NM_033389.2	992	accgaggggtacgggtatatcttg	196011	798257	see also 9415 line		
9417	SSH2	NM_033389.2	993	ccgaggggtacgggtatatcttga	196012	798258	see also 9415 line		
9418	SSH2	NM_033389.2	996	aagggttacgggtatatcttgaatg	196013	798260	see also 9415 line		
9419	SSH2	NM_033389.2	1531	atggtcccaaacagaatcaaatca	196035	798283	see also 9415 line		
9420	CASPR4	NM_033401.2	3922	tgccatagctgttcacatttato	318533	533863	-	-	-
9421	RWDD2	NM_033411.2	962	aagtgagagatgtttttcoagatac	192215	585935	phosphatase	-	-
9422	ZPR9	NM_033414.2	1295	gtcatctgcotcttgtgatgagatac	56096	473441	-	-	-
9423	ZPR9	NM_033414.2	1302	ctctctgatgagatactactaaaac	56099	473442	see also 9422 line		
9424	KIAA1737	NM_033426.2	1117	aacataggcgcgttcaagataacc	403891	784134	-	-	-
9425	FLJ00007	NM_033449.1	1604	ttgtccctgagcggatatotccaac	404034	790306	-	-	-
9426	FLJ00007	NM_033449.1	1608	ccctgagcggatatctoaactfcc	404035	790307	see also 9425 line		
9427	ABCC10	NM_033450.2	2375	agcctgcgcctccaatgatgacc	70026	492123	-	-	-
9428	KIAA1309	NM_033495.1	1981	accacaccatcataccttctagaga	132874	532771	-	-	-
9429	LUZP1	NM_033631.1	690	ttgagcggcttcagaaacgaatg	180703	715451	protein binding	-	-
9430	LUZP1	NM_033631.1	1323	accttcaggataatactaccatagt	180716	715464	see also 9429 line		
9431	MID2	NM_052817.1	1522	ctggccaggctaactctcatcagc	157909	558441	-	-	-
9432	CG018	NM_052818.1	544	ctgacactcgtcggaattcaaac	404256	749062	-	-	-
9433	SLC26A7	NM_052832.2	399	ggagataatgtggcaggttcaaca	260211	643756	-	-	-
9434	BROWNOL6	NM_052840.2	1335	ttgttagtttgtgacatccaact	58230	480363	-	-	-
9435	MGC20481	NM_052849.2	696	aggtggctccagccagcataaaagt	404417	816665	-	-	-
9436	CREB3L1	NM_052854.1	634	gactcgcgtccagctgatcaaacg	2414	703684	-	-	-
9437	MGC20398	NM_052857.1	944	tacgggaatcgcaggatgaaata	404472	719903	-	-	-
9438	MGC20398	NM_052857.1	945	acgggaatccgccagagatgaataa	404473	719904	see also 9437 line		
9439	RFT1	NM_052859.2	196	gactaacgcgtctttactcaacc	327309	799435	-	-	-
9440	MGC10485	NM_052875.2	656	cgggcagatcgaaactctactacg	133836	672880	-	-	-
9441	MGC10485	NM_052875.2	983	atccaaataccactgaaagatg	133845	672889	see also 9440 line		
9442	MGC10485	NM_052875.2	1003	atgtcatgttagggaagatatac	133846	672890	see also 9440 line		
							receptor activity,		
9443	SORCS1	NM_052918.2	560	cagcagcgtgattctcatttga	327436	652645	signal transduction	-	-
9444	SORCS1	NM_052918.2	579	ttgacaaagctctatgactataa	327438	652646	see also 9443 line		
9445	SORCS1	NM_052918.2	581	gacaaagctctatgactataacc	327439	652647	see also 9443 line		
9446	SORCS1	NM_052918.2	1436	gggaatgtcttgcttaacaaga	327464	652665	see also 9443 line		
9447	SORCS1	NM_052918.2	1447	tgtgtaacaagaagattgaacac	327465	652666	see also 9443 line		
9448	SORCS1	NM_052918.2	2640	gacagcgcgcgtctgtacttaca	327496	652696	see also 9443 line		
9449	SORCS1	NM_052918.2	2642	cagcgcgcgtctgtacttaacatg	327497	652697	see also 9443 line		

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9450	SORS1	NM_052918.2	2646	gccgtcctgtacttaccatgaac	327498	652699	see also 9443 line
9451	SORS1	NM_052918.2	2647	ccgtcctgtacttaccatgaac	327499	652700	see also 9443 line
9452	SORS1	NM_052918.2	3426	gactatctctccgattgcaaaag	327514	652713	see also 9443 line
9453	LENG8	NM_052925.1	2149	accgaatcctctactacatcttc	405331	778163	receptor_activity
9454	SLC26A9	NM_052934.2	478	cagatgtgtccagggtacatttgc	260344	643528	-
9455	SLC26A9	NM_052934.2	488	caggtaactttgcgttatcagc	260345	643529	see also 9454 line
9456	SLC26A9	NM_052934.2	961	cccatacctacagagatgatgt	260351	643534	see also 9454 line
9457	SLC26A9	NM_052934.2	1419	agccctgatcgtgtcaatctca	260357	643538	see also 9454 line
9458	SLC26A9	NM_052934.2	1421	cccagtcgtgtcaatcacaag	260358	643539	see also 9454 line
9459	SLC26A9	NM_052934.2	1427	tcgctgtcaatcacaagaactcc	260359	643540	see also 9454 line
9460	LOC11529	NM_052937.1	367	aaccggatatttaagtaacaatgg	213683	808089	-
9461	LOC11529	NM_052937.1	379	aagtaacatagggtggttaattt	213684	808090	see also 9460 line
9462	LOC11529	NM_052937.1	382	tacaatgtgtgggttaattttag	213685	808091	see also 9460 line
9463	MGC8974	NM_052940.3	1081	aggaatttgatcatagtaactgc	405454	741174	-
9464	NOSTRIN	NM_052946.2	618	aagaattcaactttttatgcaata	405477	806318	-
9465	NOSTRIN	NM_052946.2	646	aaccagtaacagccaacatatttc	405478	806320	see also 9464 line
9466	NOSTRIN	NM_052946.2	647	accagtaacagccaacatatttct	405479	806321	see also 9464 line
9467	WDFY2	NM_052950.2	315	caggacagttcgtgtttgtttaa	160802	557007	-
9468	WDFY2	NM_052950.2	435	agctctagacatgggtacaatct	160807	557009	see also 9467 line
9469	WDFY2	NM_052950.2	652	gcctcagcctgcgaatttgatgt	160812	557015	see also 9467 line
9470	WDFY2	NM_052950.2	654	ctcaggcctgcaattttgatgttg	160813	557016	see also 9467 line
9471	WDFY2	NM_052950.2	836	cagatcactgtgtcatcattgttg	160817	557021	see also 9467 line
9472	PANX3	NM_052959.2	831	agcaatatacaccaatatttggtc	327103	773988	-
9473	HSPA12B	NM_052970.3	1941	cagagagatgcgcgttcacacc	85121	503817	-
9474	USH3A	NM_052995.2	604	gtgctgtgtgtcatgatattg	313865	768805	-
9475	TRALPUS	NM_053002.2	873	cagttatcagatgagttgttcca	405625	799728	-
9476	TRALPUS	NM_053002.2	1117	tgtttatgactttagttgtatg	405629	799733	see also 9475 line
9477	TRALPUS	NM_053002.2	1268	gggtgggaacacagcgtttcaatc	405630	799736	see also 9475 line
9478	TRALPUS	NM_053002.2	1290	cagcaggttcgggcaaggattta	405632	799737	see also 9475 line
9479	TRALPUS	NM_053002.2	1291	agcaggttcgggcaaggatttat	405633	799738	see also 9475 line
9480	HCCA2	NM_053005.2	234	accacatcaacctgcagatagc	405763	733960	-
9481	PALM2	NM_053016.1	668	tggtaaccaagtagttgatagg	405783	780087	-
9482	PALM2	NM_053016.1	1262	ctgtcaatgctgtgttgcattg	405797	780095	see also 9481 line
9483	PFN2	NM_053024.1	370	tcacatggagcggcgttgaataag	118743	523557	phosphatidylinosito 1-4, 5- bispophate
9484	PFN2	NM_053024.1	373	atggagcggcgttgaataagaag	118744	523558	see also 9483 line
9485	MYLK	NM_053025.1	695	cacatgtgtcgaaggaaatgttc	92488	509129	kinase_related
9486	STAF42	NM_053053.2	66	gggggcaacacgtgaacaatact	405909	741979	-
9487	STAF42	NM_053053.2	407	atgacgacttgaacatttggcc	405920	741990	see also 9486 line
9488	CATSPER	NM_053054.2	2023	atgactgtgtccctcatcatatg	262608	646196	-
9489	CLIC6	NM_053277.1	2015	aagagatgaacacgcatttca	263549	647166	channel
9490	DACH2	NM_053281.2	267	ctgcctgcgcgaagctttgtatc	310586	676534	transcription_regulat or

Usher syndrome(紅斑性天疱瘡)

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9491	DACH2	NM_053281.2	1745	tgaaggaggtaactattactgt	310610	676560	see also 9490 line		
9492	DACH2	NM_053281.2	1748	aaggaggtaactattactgtta	310611	676561	see also 9490 line		
9493	DACH2	NM_053281.2	1749	aggaggtaactattactgttag	310612	676562	see also 9490 line		
9494	EAT2	NM_053282.1	255	taccgaatcttcagagagaaca	279601	681001	-	molecular_function	Ewing's sarcoma(ユ-イング肉腫)
9495	TEK1	NM_053285.1	333	aaggagtagtagacacaaactga	292413	662202	-	unknown	-
9496	TEK1	NM_053285.1	602	cogctctcccaagtacaactcttg	292418	662207	see also 9495 line		
9497	CATSPER	NM_054020.2	1233	atggttactaaacttcagaaatat	262625	646241	channel		
9498	CATSPER	NM_054020.2	1234	tggttactaaacttcagaatatc	262626	646242	see also 9497 line		
9499	ANKH	NM_054027.3	809	tgcctcaactcagatgtcatag	260025	654095	-	molecular_function	arthritis(関節炎)
9500	LOC11758	NM_051718.2	365	ctgcttggactgtgaagaaatt	30724	452916	-	unknown	-
9501	TWIST2	NM_051719.1	499	gcgacgagatggacaataagatg	43201	449741	-	-	-
9502	TECTB	NM_058222.1	433	aacgggagcatggcacacattga	406231	659886	-	-	-
9503	TECTB	NM_058222.1	785	tacactgtgagacgttcactcgc	406238	659897	see also 9502 line	-	-
9504	KIAA1622	NM_058237.1	1792	ttcacgaactctatgcatttttc	406307	737562	-	-	-
9505	WNT7B	NM_058238.1	259	ggcccgatgccatcattgtgatt	255506	639708	-	signal transducer	-
9506	TIAF1	NM_078471.2	999	gagatcgactgtggagattaatt	17674	509409	phosphatase	-	-
9507	TIAF1	NM_078471.2	3496	gcgcattgaccgcaaggttacc	17690	509432	see also 9506 line	-	-
9508	TIAF1	NM_078471.2	3792	cgcgcagcagcactcaagagaga	17694	509435	see also 9506 line	-	-
9509	SLC36A1	NM_078483.1	1118	ctggggtacctgcgaattggagc	259642	641848	-	-	-
9510	SCAMP-4	NM_079834.1	199	atctaccggctgtgattgttta	406361	708698	-	-	-
9511	SCAMP-4	NM_079834.1	371	tccgagccgacagctcctttaatt	406363	708702	see also 9510 line	-	-
9512	SCAMP-4	NM_079834.1	372	cgcgcacacagctcctttaatt	406364	708703	see also 9510 line	-	-
9513	ABCA9	NM_080283.2	2433	aggatcttgatagatgtcttaa	69388	491593	-	-	-
9514	VPS18	NM_080432.1	536	tacactctcgcattgacttgg	271307	772112	-	-	-
9515	B3GALT6	NM_080805.2	620	ctggcaactctgcgactactacc	210043	599083	-	-	-
9516	CBLN1	NM_080617.3	404	tccaggtaacttgatgtaaat	406456	790201	-	-	-
9517	MGC17337	NM_080655.1	299	aaggctcggacccaataaattat	406530	732717	-	-	-
9518	MGC17337	NM_080655.1	300	aggctcggacccaataaattatg	406531	732718	see also 9517 line	-	-
9519	MGC17337	NM_080655.1	301	ggctcggacccaataaattatgg	406532	732719	see also 9517 line	-	-
9520	MGC9564	NM_080669.2	344	ccactggacccctcatcatgaac	273954	656301	-	-	-
9521	SYTL4	NM_080737.1	1874	aggtgacccggaagagagaaag	275187	540945	-	-	-
9522	TMC2	NM_080751.1	727	atctttctcgcattgattgagg	327748	693521	-	-	-
9523	TMC2	NM_080751.1	738	atggatgtatggagtgtaaccttg	327749	693522	see also 9522 line	-	-
9524	TMC2	NM_080751.1	739	tggatgtatggagtgtaaccttgg	327750	693523	see also 9522 line	-	-
9525	GPR82	NM_080817.1	338	ttgccataagccgctatgctaac	240302	625193	gpcr,	receptor_activity,	-
9526	GPR82	NM_080817.1	345	aagccgctatgctaaccttaatgc	240303	625194	signal_transduction	-	-
9527	GPR82	NM_080817.1	614	ttgggaaccacatttatggattt	240315	625209	see also 9525 line	-	-
9528	PABPC5	NM_080832.1	1107	gggccaactgagagtggttaagt	53176	485327	see also 9525 line	-	-
9529	STK35	NM_080836.2	231	cggcagctacggcgtgtttatg	101741	488238	kinase_related	-	-

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9530	STK35	NM_080836.2	232	ggcagctacgcgcgtggtttatga	101742	488239	see also 9529 line	
9531	STK35	NM_080836.2	234	cagctacgcgcgtggtttatgagg	101743	488240	see also 9529 line	
9532	SOC57	NM_080867.2	863	aggctgcatattataaacgaca	310278	676387	-	SH3-domain
9533	UNC5D	NM_080872.1	490	ctctgtgcctagctcattttac	293608	638522	signal_transduction	-
9534	UNC5D	NM_080872.1	501	tagcctatttacggaaaacttt	293609	638523	see also 9533 line	-
9535	UNC5D	NM_080872.1	502	agcctatttacggaaaactttg	293610	638524	see also 9533 line	-
9536	UNC5D	NM_080872.1	1168	tgcagcgacattcgtttgtact	293619	638533	see also 9533 line	-
9537	UNC5D	NM_080872.1	1698	ggcgttagtagtaagccaaataca	293626	638541	see also 9533 line	-
9538	UNC5D	NM_080872.1	1700	cgcttagtaatgccaaatacagg	293627	638542	see also 9533 line	-
9539	UNC5D	NM_080872.1	2523	aacgagaaacacacactttcttc	293635	638548	see also 9533 line	-
9540	UNC5D	NM_080872.1	2876	aactacagcagcgaataaggact	293641	638556	see also 9533 line	-
9541	DUSP19	NM_080876.2	369	ggcctgcaagttggcgtttatga	192896	534931	phosphatase	-
9542	ESDN	NM_080927.2	1032	tgaacaattctcctagatata	319005	683035	-	-
9543	ASB15	NM_080928.2	363	ctggatgcacatcctataagacact	315451	455008	-	-
9544	ASB12	NM_130388.2	369	tgggtgtagcatctacacaaact	406896	746918	-	-
9545	UBE3B	NM_130466.2	3329	ccgaatggatccgaatgtctca	231467	616715	-	-
9546	JDP2	NM_130469.2	487	ccgatgccggaacaagaagaagg	29143	460714	transcription_regulat	-
9547	CACH-1	NM_130767.1	1597	ttggtgctgtgtcaaatccatt	199981	736298	-	-
9548	CACH-1	NM_130767.1	1598	tgggtgctgtgtcaaatccattg	199982	736299	see also 9547 line	-
9549	RGS3	NM_130795.1	1281	ctggtgcctgtcggagaacatcg	255015	639521	signal_transduction	-
9550	GREAT	NM_130806.2	968	ctgcctagaaaatacaattggttt	240458	623240	receptor_activity、	-
9551	GREAT	NM_130806.2	969	tgcctagaaaatacaattggttt	240459	623241	signal_transduction	-
9552	GREAT	NM_130806.2	970	gcctagaaaatacaattggtttg	240460	623242	see also 9550 line	-
9553	GREAT	NM_130806.2	1452	ctcacgctatgtccatcaaaatc	240476	623262	see also 9550 line	-
9554	DYX101	NM_130810.1	1494	ttctgtcaactagaaattgtatgt	407036	723916	-	-
9555	DNCL2B	NM_130897.1	307	cagaacgacgtgacttttcttag	130777	534677	-	-
9556	PPIL3	NM_130906.1	269	ttgtccagtaattactacaatg	234788	729064	-	-
9557	LRPPRC	NM_133259.2	1470	atcctgacaggaacacataca	281844	733412	-	-
9558	LRPPRC	NM_133259.2	2452	aagaggtgaaattgaacagtaa	281878	733444	see also 9557 line	-
9559	LRPPRC	NM_133259.2	3395	acgcaagtttagcgggattattt	281900	733469	see also 9557 line	-
9560	LRPPRC	NM_133259.2	3396	cgcaagtttagcgggattattt	281901	733470	see also 9557 line	-
9561	LRPPRC	NM_133259.2	3399	aagtttagcgggattatttga	281902	733471	see also 9557 line	-
9562	WIRE	NM_133264.2	832	cagagacacaattcttgcatag	407167	810640	-	-
9563	GSH-2	NM_133267.1	649	ctctggagacgcgcagtttgc	4520	444442	transcription_regulat	-
9564	KCNQ3	NM_133329.4	872	ctctcttacaacgagatgact	260995	536485	or	transcription factor
9565	KCNQ3	NM_133329.4	1686	tgtctgtgtgtgattatctctat	261010	536493	channel	-
9566	YT521	NM_133370.1	1622	ctggatttcagcggcggaattac	325133	797848	see also 9564 line	-
9567	YT521	NM_133370.1	1623	tggatttcagcggcggaattacc	325134	797849	-	-
9568	YT521	NM_133370.1	1883	aaggcgtcagcagaagattatg	325141	797859	see also 9566 line	-

9569	YT521	NM_133370.1	1886	gcgtcgaccagaagattatgata	325142	797861	see also 9566 line
9570	YT521	NM_133370.1	1888	gtcgaccagaagattatgata	325143	797862	see also 9566 line
9571	YT521	NM_133370.1	2015	aggagttcgccgagatgtgttt	325147	797866	see also 9566 line
9572	YT521	NM_133370.1	2020	tgcgcgagatgtgttttaaat	325149	797867	see also 9566 line
9573	IDN3	NM_133433.1	6868	tggatgtcatcgtatttctgt	407200	812593	cell_cycle
9574	IDN3	NM_133433.1	6884	ttgctgtcaaaagtaacaagtc	407202	812594	see also 9573 line
9575	IDN3	NM_133433.1	7072	ttgcttaacggagtgctaataag	407206	812597	see also 9573 line
9576	IDN3	NM_133433.1	7073	tgtctaaagagtgctaataagc	407207	812598	see also 9573 line
9577	IDN3	NM_133433.1	7092	aagctgactaataaagtgttca	407208	812600	see also 9573 line
9578	GPT2	NM_133443.1	326	gagctgcagcggaggtatcaaaa	218203	606118	-
9579	EMU1	NM_133455.1	1133	tacgcgaggtttgaagatttta	407216	535110	transcription_regulat
9580	EMU1	NM_133455.1	1179	aacaatgattggctctctgaac	407218	535113	see also 9579 line
9581	TTC14	NM_133462.1	517	atggtgtgatactgttttaggaag	55565	472747	-
9582	TTC14	NM_133462.1	656	ttcgagctggaatcaagatatt	55576	472752	see also 9581 line
9583	TTC14	NM_133462.1	936	aggctcaaaagcaaaaattct	55589	472768	see also 9581 line
9584	TTC14	NM_133462.1	1290	tgtgaaaagttactataagaag	55597	472785	see also 9581 line
9585	BMPIR	NM_133468.2	559	cacagacaacctgtcataatgt	138176	734700	-
9586	BMPIR	NM_133468.2	797	ggggtgcgtgtgtttgttcattg	138181	734703	see also 9585 line
9587	BMPIR	NM_133468.2	2137	gtgtgaatgtcaagtcataaaa	138216	734739	see also 9585 line
9588	CD109	NM_133493.1	1873	tgggattgtagtgttgacaaaa	293948	663979	-
9589	NEK7	NM_133494.1	616	cacagctcacattcttttagtg	94705	510248	kinase_related
9590	QX1	NM_133637.1	2087	ctcatactctctgagtaacttg	80886	500883	-
9591	CLYL	NM_138280.2	524	ctgcaatgggtttgtcgaattt	216602	603817	-
9592	G14orf147	NM_138288.1	69	agcagatgctctgggttctactac	407444	750507	-
9593	RPIB9	NM_138290.1	548	ctgathgatcggcttctgtttga	407452	813621	-
9594	RPIB9	NM_138290.1	753	gagtggtgtccggaagaatttca	407463	813625	see also 9593 line
9595	RPIB9	NM_138290.1	755	gtggcttgcgggaagtttcaca	407464	813626	see also 9593 line
9596	PANK1	NM_138316.2	714	accctattgtctgtgttaacatg	95591	511200	kinase_related
9597	KCNK10	NM_138317.1	214	tccaatcgagcgcgaagaaaaac	261267	644687	channel, signal_transduction
9598	RHBDL4	NM_138328.1	460	accgcaagtgttactatgacagc	152052	553022	serine-type endopeptidase
9599	SBB154	NM_138334.1	220	gggacacggcaactatgatgtca	407527	716042	-
9600	GNPDA2	NM_138335.1	160	gaggcttgtaattcttgataact	234833	619564	-
9601	GNPDA2	NM_138335.1	279	caggaggtacaccttttagagtc	234839	619567	see also 9600 line
9602	ABHD3	NM_138340.3	508	cagcaccagacctactatcttat	235735	595055	-
9603	ABHD3	NM_138340.3	1216	tggaggccatattgttttctgg	235755	595073	see also 9602 line
9604	LOC91768	NM_138375.1	791	agggaagtthctctacattaag	308255	533141	-
9605	LOC92689	NM_138389.1	602	tgcacagtaggtcattgattga	407888	726710	-
9606	LOC92689	NM_138389.1	1312	gggcccacacctgacaaactcaat	407900	726722	see also 9605 line
9607	LOC92689	NM_138389.1	1314	ggccacacctgacaaactcaataa	407901	726723	see also 9605 line
9608	LOC92689	NM_138389.1	1316	cacacctgacaaactcaataag	407902	726724	see also 9605 line
9609	G1orf37	NM_138391.3	546	tccgtctcgaggacattgtgaat	407935	710705	-

(Alzheimer disease(アルツハイマー病))



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9610	C1orf37	NM_138391.3	547	cgcctcaggacatttgaatt	407936	710706	see also 9609 line
9611	LOC92906	NM_138394.2	553	tggacaatatcgtatgtatga	63886	479133	-
9612	LOC92906	NM_138394.2	951	ctggaattgacactaaaatt	63906	479150	see also 9611 line
9613	LOC92906	NM_138394.2	990	ctcgtctaaatgtattaggaaat	63909	479154	see also 9611 line
9614	LOC92906	NM_138394.2	991	tcgtctaaatgtattaggaaatg	63910	479155	see also 9611 line
9615	LOC92935	NM_138395.1	946	cacctctcatatcataggaagg	88730	496788	-
9616	LOC92935	NM_138395.1	960	taggtaaggacattctcaaatc	88731	496789	see also 9615 line
9617	CKLFSF7	NM_138410.2	654	ctggtagccggagcgatctttgg	328618	694526	-
9618	H63	NM_138423.2	611	atgcgaggatgacaagaattaaac	408076	792300	-
9619	H63	NM_138423.2	1406	tccgcagcatggctctaaactgg	408097	792331	see also 9618 line
9620	H63	NM_138423.2	1448	tggtaacgtagggtgagatgagg	408098	792334	see also 9618 line
9621	H63	NM_138423.2	1481	ggctgagctggcttaaatgagg	408099	792335	see also 9618 line
9622	FOXP4	NM_138457.1	2053	agcggagaccgcaaaagatgaca	4256	444263	transcription_regulat
9623	LOC11614	NM_138458.1	959	ttcagcgggtcaaaagaagattct	88576	493575	or
9624	LOC13002	NM_138468.3	794	tggagctagctcgtcgaattatgc	408331	729283	-
9625	LOC13002	NM_138468.3	797	agctagtgcgtcaatatgctat	408332	729284	see also 9624 line
9626	SP1	NM_138473.2	1678	agggctccagaccattaaacctca	40667	704731	-
9627	SP1	NM_138473.2	2420	ctgcagctccatttaataatgctg	40676	704746	see also 9626 line
9628	TMC1	NM_138691.2	1380	ggggattatgcatctggatataca	313824	678691	-
9629	TMC1	NM_138691.2	2267	acgtctcgtctgctgcttcaac	313849	678722	see also 9628 line
9630	LOC91137	NM_138773.1	1042	ttgtctgagcttatcttcttacc	180887	573364	-
9631	SYTL5	NM_138780.1	325	atcgcgcagcttaaggattataac	265824	649702	-
9632	SYTL5	NM_138780.1	1183	tacagtgaacggagagactatgg	265850	649730	see also 9631 line
9633	SYTL5	NM_138780.1	1328	cagatgttatgtcaagtcatat	265852	649733	see also 9631 line
9634	SYTL5	NM_138780.1	1378	aagcgtgaagcacaataatcagaac	265854	649735	see also 9631 line
9635	SYTL5	NM_138780.1	1379	agcgtgaagcacaataatcagaaca	265855	649736	see also 9631 line
9636	LOC12964	NM_138799.2	253	ttggttogaacttatctacatt	408912	720899	-
9637	LOC12964	NM_138799.2	348	ttggatgggtatgccttacacttt	408917	720904	see also 9636 line
9638	LOC12964	NM_138799.2	358	tgccttacactttctgtacaaa	408918	720908	see also 9636 line
9639	LOC12964	NM_138799.2	1077	ctcgtctggacttaatttccaat	408950	720939	see also 9636 line
9640	LOC13061	NM_138802.1	452	aagatcttcaccaataaagtgtga	281389	666534	-
9641	C7orf31	NM_138811.3	1437	ccccccttgaactggatgattacc	409162	655427	-
9642	VANG1	NM_138959.1	1030	cacaacagtggtgattatgaaga	328052	796648	-
9643	MS12	NM_138962.2	1010	aggacgtctgcgcgactctatcag	64712	472437	-
9644	MS12	NM_138962.2	1050	tccggatggggaattacataag	64713	472439	see also 9643 line
9645	MS12	NM_138962.2	1125	ttgattgcaacggcctttacaaa	64716	472441	see also 9643 line
9646	MS12	NM_138962.2	1133	aacggccttaacaaatggatacc	64717	472442	see also 9643 line
9647	NETO1	NM_138966.2	791	accagcgtgtgaggttgagatgg	409296	755268	-
9648	ADAMTS1	NM_139054.2	2651	ttoaacttgaagtttataaag	184855	579111	-
9649	ADAMTS1	NM_139054.2	2789	tccaagccttaagcaaaagtatt	184861	579114	see also 9648 line
9650	ADAMTS1	NM_139056.1	2112	ctcggaggatagccgtaattgtt	184770	579054	-
9651	ADAMTS1	NM_139056.1	2113	tcgagagatagccgtaattgtt	184771	579055	see also 9650 line
9652	ADAMTS1	NM_139056.1	2114	cggaggatagccgtaattgtt	184772	579056	see also 9650 line

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[illegible]

9690	KCNH5	NM_139318.3	1335	aagccttacaccatgagattg	121544	596838	see also 9688 line
9691	KCNH5	NM_139318.3	1742	tagagttcaaacattcactgt	121548	596851	see also 9688 line
9692	KCNH5	NM_139318.3	2661	aagtgaactcgttggaagg	121570	596867	see also 9688 line
9693	CNOT6L	NM_144571.1	98	ctccagatctcgcgagattat	409771	754869	-
9694	CNOT6L	NM_144571.1	536	cagcatcattcaggttatgt	409787	754891	see also 9693 line
9695	CNOT6L	NM_144571.1	544	ttcaggttatgtacaaagt	409788	754892	see also 9693 line
9696	CNOT6L	NM_144571.1	673	gacgagatatcttagcttca	409791	754896	see also 9693 line
9697	CNOT6L	NM_144571.1	1066	tgaggaccagagattctgtgt	409800	754907	see also 9693 line
9698	CNOT6L	NM_144571.1	1262	tagctgaacacataaagacttc	409808	754914	see also 9693 line
9699	CNOT6L	NM_144571.1	1301	atgagtcttatgaactcagc	409810	754917	see also 9693 line
9700	CNOT6L	NM_144571.1	1373	aacttaagagcgctatgaaat	409813	754918	see also 9693 line
9701	CNOT6L	NM_144571.1	1380	gagcgctatgaataaactga	409814	754919	see also 9693 line
9702	WDR20	NM_144574.2	711	ggcgcccaacgagttgtcttc	409873	730322	-
9703	WDR20	NM_144574.2	1183	ctgtttatggacccctacagaag	409881	730338	see also 9702 line
9704	WDR20	NM_144574.2	1598	atggaagatgtccctgttaga	409897	730351	see also 9702 line
9705	SFXN5	NM_144579.1	755	ctgtagccagtgccaatctgc	266773	653889	-
9706	ATP6V1C2	NM_144583.1	47	ccctggcgataaggaatttgc	73330	494912	-
9707	RHEBL1	NM_144593.1	267	atcttggacacatttggg	110632	518088	signal_transduction
9708	RHEBL1	NM_144593.1	315	tcctacagtgagaaacttaca	110633	518090	see also 9707 line
9709	TTC8	NM_144596.1	111	tcagctctgcgcgatctatgc	410125	739623	-
9710	TTC8	NM_144596.1	531	ctgatgacacatttataaatta	410139	739636	see also 9709 line
9711	MGC24976	NM_144598.2	493	tacgtcatctcgttagctaata	410178	785621	-
9712	MGC24976	NM_144598.2	494	acgtcatctcgttagctaata	410179	785622	see also 9711 line
9713	MGC24976	NM_144598.2	496	gtcatctcgttagctaataac	410180	785623	see also 9711 line
9714	MGC24976	NM_144598.2	536	tccagaggtggcgattgaagg	410181	785625	see also 9711 line
9715	BHD	NM_144606.3	1032	accgatctacccatcaactcc	410251	759397	-
9716	MGC29891	NM_144618.1	1212	ttggccagcaattatgtgaact	410371	774951	-
9717	KIS	NM_144624.1	957	gtgttgatgcgcgaattccagc	52349	473965	kinase_related
9718	KIS	NM_144624.1	1049	ggcattgtgagcccatcttta	52354	473968	see also 9717 line
9719	KIS	NM_144624.1	1076	tcctttgcccctcatattgaag	52356	473969	see also 9717 line
9720	C20orf140	NM_144628.1	1056	acggcagcctctacttcaaga	410542	714809	-
9721	C20orf140	NM_144628.1	1184	aaggaccacccgctttgtgaat	410546	714812	see also 9720 line
9722	ZNF513	NM_144631.2	365	aagtgcgagagtagagttgagg	410586	787881	-
9723	ZNF513	NM_144631.2	1501	gtgccacactgcgcctataccag	410591	787883	see also 9722 line
9724	MGC26610	NM_144647.2	405	tggaacaatagaacttcaatgaat	148236	542780	-
9725	FLJ33069	NM_144649.1	467	atcttggtcagcagaatgtct	410822	775029	-
9726	BTBD14A	NM_144653.2	428	agcagctcgtgtcagttacacg	129339	530568	-
9727	SAMD8	NM_144660.1	865	caagtgtactggaaagatatatg	411101	723459	-
9728	OTOA	NM_144672.2	791	tacatggttcaactatgttga	411248	693909	-
9729	OTOA	NM_144672.2	794	atggttcaactatgttgaaga	411249	693910	see also 9728 line
9730	TOM1L2	NM_144703.1	1256	atctgtcactgagcagattgagg	102743	650207	-
9731	C20orf40	NM_144703.1	898	gtccaactaactgaaggaaac	411498	798554	-
9732	C20orf40	NM_144703.1	899	tccaactaactgaaggaaac	411499	798555	see also 9731 line
9733	FLJ25200	NM_144715.2	2321	gtgtgttccaaccattcgatct	145817	543059	-

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9734	LOC15218	NM_144718.2	636	aggcgacaggggttccaaatgt	411695	753489	-	-	-
9735	LOC15218	NM_144718.2	1390	gtgccttggttggtacattaa	411711	753506	see also 9734 line	-	-
9736	LOC15218	NM_144718.2	1391	tcgcttggttggtacattaaag	411712	753507	see also 9734 line	-	-
9737	LOC15218	NM_144718.2	1392	cgcttggttggtacattaaaga	411713	753508	see also 9734 line	-	-
9738	LOC15218	NM_144718.2	1396	tggttggtacattaaagaaggt	411714	753509	see also 9734 line	-	-
9739	FLJ31564	NM_144720.1	2221	aacgagctgttagaattcagagt	411789	801420	-	-	-
9740	FLJ31564	NM_144720.1	2240	gagtgctagaactcgaagtaaga	411790	801421	see also 9739 line	-	-
9741	FLJ31564	NM_144720.1	2242	gtgctagaactcgaagtaaga	411791	801422	see also 9739 line	-	-
9742	FLJ31564	NM_144720.1	2259	aagagactctatgtgttaaac	411792	801423	see also 9739 line	-	-
9743	FLJ31564	NM_144720.1	2281	ctctcaaacgagcagacattct	411793	801424	see also 9739 line	-	-
9744	FLJ31121	NM_144723.1	22	cgggcagcgggacaaaaacttg	51743	717431	-	-	-
9745	FLJ31121	NM_144723.1	23	gggcagcgggacaaaaacttgg	51744	717432	see also 9744 line	-	-
9746	FLJ31121	NM_144723.1	51	cgccgaaagtgagcacaagatga	51746	717433	see also 9744 line	-	-
9747	FLJ31455	NM_144964.1	439	aacactcagcaccagactatgt	145882	542922	-	-	-
9748	ZDHHC15	NM_144969.1	79	ctgggtgcagtgctcgttatgg	412012	788480	-	-	-
9749	ZDHHC15	NM_144969.1	628	accceagttgcgtctaagtcc	412022	788493	see also 9748 line	-	-
9750	ZDHHC15	NM_144969.1	899	ttccctagaggtctatgaatga	412029	788498	see also 9748 line	-	-
9751	MGC39350	NM_144970.1	401	atggtatgcagtgctcttttaa	412034	785739	-	-	-
9752	MGC39350	NM_144970.1	415	ctcttttaagttctcaactcc	412035	785741	see also 9751 line	-	-
9753	MGC39350	NM_144970.1	533	gtgcttcagagatttcagatga	412041	785743	see also 9751 line	-	-
9754	MGC24039	NM_144973.2	509	atggttctgcacactatgtttt	412059	793936	-	-	-
9755	MGC24039	NM_144973.2	510	tggtttctgcacactatgttttg	412060	793937	see also 9754 line	-	-
9756	MGC24039	NM_144973.2	513	ttctgcacactatgtttttg	412061	793938	see also 9754 line	-	-
9757	MGC24039	NM_144973.2	551	aagttacaagtaagcaaatctgc	412062	793939	see also 9754 line	-	-
9758	MGC24039	NM_144973.2	1318	gagttgctcgaagaatttcacac	412090	793957	see also 9754 line	-	-
9759	MGC24039	NM_144973.2	1895	tcggacaattatataatcagaaa	412110	793975	see also 9754 line	-	-
9760	MGC24039	NM_144973.2	2191	atgcaagaggcagcaagatttagg	412118	793980	see also 9754 line	-	-
9761	MGC27044	NM_144977.1	442	aagttgacagcactttaccctt	412173	809192	-	-	-
9762	U2AF1L3	NM_144987.1	25	ctgaattattagcttgatattc	67079	487013	-	-	-
9763	U2AF1L3	NM_144987.1	60	gacagggttaactgctctttta	67080	487015	see also 9762 line	-	-
9764	C10orf9	NM_145012.3	223	atcctcggggccagcacaatttc	308111	674694	-	-	-
9765	C10orf9	NM_145012.3	224	tcctcggggccagcacaatttc	308112	674695	see also 9764 line	-	-
9766	C10orf9	NM_145012.3	277	aacgcaagagctcttcattaac	308113	674696	see also 9764 line	-	-
9767	MGC33887	NM_145036.1	1622	aagcagctgattagagataaga	413059	739840	-	-	-
9768	MGC33887	NM_145036.1	1754	tacatacgcaagaatatagaac	413063	739787	see also 9767 line	-	-
9769	MGC12909	NM_145055.1	289	tacaactggccagatttataga	413313	802706	-	-	-
9770	C13orf3	NM_145061.2	657	aactcttaatttagaacacttgg	413378	813449	-	-	-
9771	C6orf113	NM_145062.1	300	agctcacctaattttcacatgg	413407	733713	-	-	-
9772	C6orf113	NM_145062.1	1680	tacatcaaacctctatctatc	413454	733791	see also 9771 line	-	-
9773	MGC2793	NM_145064.1	952	gtggctctctatcgggtcaaacg	316743	680165	-	-	-
9774	TRPV3	NM_145068.2	599	gtgacagagaccccatccaatcc	252295	646606	receptor activity	-	-
9775	NSE1	NM_145080.2	267	tccaaatggctacggatttgc	265565	647737	-	-	-
9776	NSE1	NM_145175.1	331	gggtcggggttgcctactcttc	413754	737803	-	-	-

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9777	NSE1	NM_145175.1	334	toggattgctacttctctcg	413755	737804	see also 9776 line	
9778	SLC2A12	NM_145176.1	287	ctcctgggtggtatgaacttg	258989	643286	-	-
9779	CABP4	NM_145200.1	711	cgcatcgctctccgagagttga	138463	544676	signal_transduction	calcium ion binding
9780	SPATA5	NM_145207.1	1395	cactctacagacaccatcaattga	101084	515144	-	-
9781	SPATA5	NM_145207.1	1397	ctctacagacaccatcaattga	101085	515145	see also 9780 line	-
9782	SPATA5	NM_145207.1	1920	agcaaatgatgcccaaatgat	101099	515167	see also 9780 line	-
9783	LOC11570						gpcr,	-
9784	LOC12449	NM_145245.2	229	aagtcacatgcctccatgaatgg	88545	655850	signal_transduction	-
9785	LOC12449	NM_145254.1	352	tgggcacatgcgggaccaattact	413913	718823	-	-
9786	LOC15119	NM_145254.1	354	ggcatcggtgggaccaattactgc	413914	718824	see also 9784 line	-
9787	LOC15119	NM_145280.3	535	gagctgacttggggacacaaattt	414121	720414	-	-
9788	LOC15119	NM_145280.3	536	agctgacttggggacacaaattt	414122	720415	see also 9786 line	-
9789	LOC15909	NM_145284.3	1113	cagtagcatgctccaattoatgc	414147	741661	-	-
9790	LACE1	NM_145315.2	1210	accgtgcgactgcacatttga	414399	758076	-	-
9791	MGC21654	NM_145647.1	1647	ttgctactctcataatcaattg	414548	816487	-	-
9792	MUC15A4	NM_145648.1	1044	taccttactggacagtgatttct	163883	561198	-	-
9793	MUC15	NM_145650.2	1158	aaccagttctgcgattagacaat	414618	782012	-	-
9794	MUC15	NM_145650.2	1159	accagttctgcgattagacaatg	414619	782013	see also 9792 line	-
9795	MAP4K4	NM_145686.1	1937	ctggaatctctcaagaacaattgt	414682	507498	kinase_related	-
9796	ACBD5	NM_145698.1	371	ttgggacatctattggaagatata	172449	569759	-	-
9797	ACBD5	NM_145698.1	372	tgggacatctattggaagataaa	172450	569760	see also 9795 line	-
9797	CDIPT	NM_145752.1	467	aaggttatgcccggttcttc	161802	606496	phosphatidylinositol transporter	-
9798	CDIPT	NM_145752.1	468	aggttatgcccggttcttc	161803	606497	see also 9797 line	-
9799	LL5beta	NM_145753.1	273	gagacattctggctctctatta	414776	769312	-	-
9800	LL5beta	NM_145753.1	2471	gaggtctatatcagtgtaaatga	414821	769355	see also 9799 line	-
9801	ISL2	NM_145805.1	1112	tccgggacacccccacagatg	5597	445132	transcription_regulat	transcription factor
9802	ISL2	NM_145805.1	1113	ccgggacacccccacagatg	5598	445133	or	-
9803	A2BP1	NM_145891.1	1198	cggcggagtagtgatcaagagc	49538	473002	see also 9801 line	-
9804	SLC5A8	NM_145913.2	870	gggggtggtgtgcacattctact	274444	657065	-	-
9805	SLC5A8	NM_145913.2	872	gggtgctgcacattctactgc	274445	657066	see also 9804 line	-
9806	LOC22308	NM_147128.3	1720	aggctgcagatagatgattgttg	415017	816042	-	-
9807	MOB	NM_147156.2	1584	ctgtacotgtatcggtgtattac	415045	753837	kinase_related	-
9808	MOB	NM_147156.2	2035	ggccattgaacttggaaaag	415059	753854	see also 9807 line	-
9809	MOB	NM_147156.2	2066	aggattgtacctgcattacc	415060	753855	see also 9807 line	-
9810	MOB	NM_147156.2	2071	ttgtacotgatcttaccattgg	415061	753856	see also 9807 line	-
9811	HSST2	NM_147174.2	909	ctgtcatgctgaaagcaaga	218807	606648	-	-
9812	FBXO22	NM_147188.1	928	gtgtgtggactgtctatttgg	415072	732203	-	-
9813	FBXO22	NM_147188.1	1127	aggctgtgatgtaagaattg	415078	732208	see also 9812 line	-
9814	MMP21	NM_147191.1	891	gggatccaatatgcaacaaatt	158294	558855	-	-
9815	OTX3	NM_147192.2	60	ctcactcagcgccatgacaacc	8801	443010	transcription_regulat	-
9816	C6orf4	NM_147200.1	1495	ttgacatatattgaggatagaac	277970	749737	kinase_related	-

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9817	C6orf4	NM_147200.1	1582	tagcaatcagcccaatacaaa	277979	749746	see also 9816 line
9818	C6orf4	NM_147200.1	1648	atgcttactactaagtaatt	277982	749750	see also 9816 line
9819	C6orf4	NM_147200.1	1650	ggcttactactaagtaatt	277983	749752	see also 9816 line
9820	SMC1L2	NM_148674.1	1712	tcgctctagattaccctgatac	100549	467501	cell cycle
9821	SMC1L2	NM_148674.1	2129	cacgactcaaatattcaaaaat	100566	467515	see also 9820 line
9822	SMC1L2	NM_148674.1	3228	ctcaattgatcaaatctacaaga	100598	467553	see also 9820 line
9823	FLJ38628	NM_152267.2	331	ttctgtggccgtgtttacatca	415225	755725	-
9824	FLJ38628	NM_152267.2	520	ggggatttcaaggatttgatt	415230	755727	see also 9823 line
9825	MGC29816	NM_152272.1	863	ggcagtcgagcagcaggaagc	282114	667015	-
9826	DC-Ubp	NM_152277.1	123	tacgcagcagcagcaggaatt	415294	784580	-
9827	SYT11	NM_152280.2	1220	atcaccgctctcaggtaattcc	274993	707453	-
9828	SYT11	NM_152280.2	1223	accggtctcaggtaattccta	274994	707454	transporter
9829	FLJ11752	NM_152281.1	470	acctcaagccagcaggtgcaat	415313	804644	-
9830	ZFP276	NM_152287.2	1086	acctcggatgcaggtaaaaga	415366	649974	transcription_regulat
9831	ZFP276	NM_152287.2	1088	ctcggatgcaggtaaaagc	415367	649975	or
9832	TARS	NM_152295.3	1276	caggaccacaagaactatttct	102101	515917	threonine-tRNA
9833	TARS	NM_152295.3	2287	tgcacagttagcacagataact	102123	515946	ligase
9834	ATP1A3	NM_152296.2	232	aagggtctgcggaaatacaac	72645	494407	see also 9832 line
9835	NIRF	NM_152306.2	488	aagcagttggaaaatggatatac	33800	453151	sodium/potassium-
9836	NIRF	NM_152306.2	883	atccaaagagaaacaaataaat	33817	453171	exchanging
9837	NIRF	NM_152306.2	1072	tggatgtgtaattggttaatt	33829	453181	transcription_regulat
9838	NIRF	NM_152306.2	2064	atgtctcattgagatataaatt	33861	453211	or
9839	GYLTL1B	NM_152312.2	639	cggcctataggcctaataagc	212105	600680	see also 9835 line
9840	SLC36A4	NM_152313.2	425	ttggtacgttcagtcactttct	259653	641874	see also 9835 line
9841	FLJ30002	NM_152341.2	136	ggccacactgcagttcaataagt	326532	691363	receptor activity
9842	MGC42174	NM_152383.2	261	gtgcttcgagcagtgacaaaaag	52536	472820	-
9843	DKFZp762i	NM_152384.1	145	ttgttagattccattgaagaca	416028	733677	-
9844	DKFZp762i	NM_152384.1	651	taccatattcgaaattcgttca	416051	733702	see also 9843 line
9845	DKFZp762i	NM_152384.1	682	tagagattcaaaatttggttag	416054	733705	see also 9843 line
9846	194	NM_152384.1	978	aagatcgtgaacctgtatttca	416060	733710	see also 9843 line
9847	FLJ31322	NM_152387.1	493	tagaacttaaaagccttaaca	131348	534116	-
9848	FLJ31322	NM_152387.1	562	gggttcacactatcttaacaca	131351	534123	see also 9847 line
9849	FLJ31322	NM_152387.1	565	ttctccactatcttaacacatc	131352	534124	see also 9847 line
9850	FLJ31322	NM_152387.1	593	aagctgtgagtagaattattg	131354	534125	see also 9847 line
9851	FLJ39370	NM_152400.1	312	atgggttcacaaaggatgattt	416278	729614	-
9852	FLJ39370	NM_152400.1	313	tgggttcacaaaggatgattt	416279	729615	see also 9851 line

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9853	FLJ39370	NM_152400.1	314	gggcttcacaggatgattttg	416280	729616	see also 9851 line
9854	FLJ39155	NM_152403.2	1707	aagtggagaccacaaatcaactag	146064	544333	-
9855	JMY	NM_152405.1	154	aagatttcacatggagaaatgatta	416318	525524	-
9856	JMY	NM_152405.1	989	tgatagacttcgaacatttaaa	416343	525548	see also 9855 line
9857	GRPEL2	NM_152407.2	585	gctcgacacccggcattagtaa	416372	668160	-
9858	GRPEL2	NM_152407.2	623	aacttcacggccgcacatttag	416378	668161	see also 9857 line
9859	FLJ35779	NM_152408.1	939	atgttatctggagctttggaaaa	416402	722117	-
9860	FLJ32370	NM_152417.1	617	ggcagaacttccgagtagtc	216282	603285	-
9861	FLJ32370	NM_152417.1	827	ggcttgctcgaagtgcattga	216289	603293	see also 9860 line
9862	MGC24137	NM_152430.1	263	ttgtgtgctagtaacttgaca	240800	626610	receptor_activity,
9863	KBTBD3	NM_152433.2	883	gagattacatcagttatcagg	132089	536120	signal_transduction
9864	KBTBD3	NM_152433.2	1406	cgggacattaaagtctctaga	132105	536148	-
9865	KBTBD3	NM_152433.2	1419	gtctttagatttgaactttac	132106	536149	see also 9863 line
9866	FLJ32549	NM_152440.1	142	aggagacagaggcacaacagagc	416811	782335	see also 9863 line
9867	FLJ32549	NM_152440.1	240	acctaccctggggcagaaactagg	416813	782336	-
9868	C14orf44	NM_152445.1	1741	aaggccctattctttgaacaaag	321340	685767	see also 9866 line
9869	C14orf146	NM_152447.2	861	ctgaactatccaggaaatacaat	23248	454880	-
9870	C14orf146	NM_152447.2	869	atccaggaaatacaataagtttta	23249	454881	-
9871	C14orf146	NM_152447.2	939	ttgaatagcaacagattgactaa	23253	454888	see also 9869 line
9872	C14orf146	NM_152447.2	1083	ctgtccctaatatctagaac	23260	454895	see also 9869 line
9873	C14orf146	NM_152447.2	1971	cagtacaatggtactattatga	23288	454738	see also 9869 line
9874	C14orf146	NM_152447.2	2130	gtgggttgatccagtttactac	23297	454744	see also 9869 line
9875	C14orf146	NM_152447.2	2147	tactacaggaacagagattatgac	23298	454746	see also 9869 line
9876	KLHL10	NM_152467.1	835	aagatgaatgactatgtcaaga	29975	461100	-
9877	KLHL10	NM_152467.1	1848	tgcaagtagacggagcaacttc	30007	461128	-
9878	FLJ31842	NM_152467.1	489	aggctacatcttctgattgt	417068	805132	see also 9876 line
9879	FLJ25286	NM_152546.1	87	aactctgaacctcaataacagg	417878	720986	-
9880	FLJ23654	NM_152550.1	223	atggatgatttgacttactga	417976	781816	-
9881	FLJ31818	NM_152556.1	682	aactgttgcatagatattgac	418084	787901	-
9882	ATP6V0D2	NM_152565.1	1074	ttcacagagcgcacgaactaaa	304856	672844	-
9883	ATP6V0D2	NM_152565.1	1076	cacagagcgcacgaactaaaac	304857	672845	-
9884	FLJ31810	NM_152570.1	969	ctggttcctccgctctaaag	418126	789576	see also 9882 line
9885	FLJ31810	NM_152570.1	1296	atgctgtgtatgcctttaaag	418134	789582	-
9886	FLJ31810	NM_152570.1	2375	cagcattgaccccttgatgtg	418158	789607	see also 9884 line
9887	DKFZp762	NM_152588.1	461	tggggctgccttgatctcaac	418345	795531	-
9888	DKFZp762	NM_152588.1	513	cagccgtgctatcaagactaat	418346	795533	-
9889	DKFZp762	NM_152588.1	516	ccgtgctatcaagactaatcagg	418348	795534	see also 9887 line
9890	SPRED1	NM_152594.1	119	cggcgactcttgacacactaat	418525	744174	signal_transduction
9891	SPRED1	NM_152594.1	120	ggcgactctgacacactaata	418526	744175	see also 9890 line

9892	SPRED1	NM_152594.1	121	gcgacttcgcaacagataatag	418527	744176	see also 9890 line
9893	SPRED1	NM_152594.1	453	cogaagactatagagatatatt	418534	744180	see also 9890 line
9894	SPRED1	NM_152594.1	994	gggagatgagactaagttaagttc	418552	744204	see also 9890 line
9895	SPRED1	NM_152594.1	1097	aacgtctcgcgcgtatactgc	418556	744212	see also 9890 line
9896	SPRED1	NM_152594.1	1357	tgcgtactagtccttggagaat	418565	744221	see also 9890 line
9897	SPRED1	NM_152594.1	1359	ctgctaagtcctcttgagaatgt	418566	744222	see also 9890 line
9898	FLJ35989	NM_152597.3	631	aagcaaggtctagaaatagaaat	418639	730808	-
9899	FLJ32001	NM_152609.1	972	agggatttaattggtgaagatttt	418782	760250	-
9900	FLJ32001	NM_152609.1	973	gggatttaattggtgaagattttg	418783	760251	see also 9899 line
9901	TRIM42	NM_152616.3	1226	agcagtcgcatatgaaattgata	160562	555320	-
9902	TRIM42	NM_152616.3	1228	cagtcgcatatgaaattgataat	160563	555321	see also 9901 line
9903	FLJ35794	NM_152617.2	724	tcggtaccatacccgagaatt	418901	729089	-
9904	FLJ35794	NM_152617.2	725	cggtaaccatacccgagaatttc	418902	729090	see also 9903 line
9905	MGC45428	NM_152619.1	677	agcgcgtcggatccttctgaata	91328	489634	kinase_related
9906	MGC45428	NM_152619.1	678	gcggtcggatccttctgaataa	91329	489635	see also 9905 line
9907	MGC45428	NM_152619.1	681	gtgcggatccttctgaataaaa	91330	489637	see also 9905 line
9908	MGC45428	NM_152619.1	738	atcacccaagccattaaactaga	91333	489639	see also 9905 line
9909	MGC45428	NM_152619.1	740	cacgaagccattaaactagact	91334	489640	see also 9905 line
9910	MGC34648	NM_152660.1	729	accaggcactgaccactttgca	265484	648625	-
9911	FLJ34969	NM_152678.1	576	ttggtttgtatcagcaaacacc	419640	758800	-
9912	FLJ34969	NM_152678.1	1146	cagcaactggccacacattatcg	419664	758825	see also 9911 line
9913	FLJ34969	NM_152678.1	1149	cactggccacacattatcgat	419665	758826	see also 9911 line
9914	FLJ34969	NM_152678.1	1151	ctggccacacattatcgatag	419666	758827	see also 9911 line
9915	FLJ34969	NM_152678.1	1152	tggccacacattatcgatagg	419667	758828	see also 9911 line
9916	FLJ34969	NM_152678.1	1394	aagtttcattcattcattagaaa	419673	758837	see also 9911 line
9917	MGC29463	NM_152686.1	767	tcgccatagatctgtttctata	32200	453488	-
9918	MGC29463	NM_152686.1	768	ccccatagatctgtttctataa	32201	453489	see also 9917 line
9919	HIPK1	NM_152696.3	335	ctctcaccaggtagcgaatttca	28163	503439	kinase_related
9920	HIPK1	NM_152696.3	668	cagcggagagagggtattaccagc	28174	503445	see also 9919 line
9921	HIPK1	NM_152696.3	875	ttcccgcttaagcagtgaaaatg	28177	503446	see also 9919 line
9922	HIPK1	NM_152696.3	1788	aagcggagggttcacatgtatga	28196	503465	see also 9919 line
9923	HIPK1	NM_152696.3	1790	gcggagggttcacatgtatgata	28197	503466	see also 9919 line
9924	HIPK1	NM_152696.3	2084	ttgcaactagacagatccattcc	28204	503473	see also 9919 line
9925	HIPK1	NM_152696.3	2264	gggaagcgtgtacaccactatgg	28209	503477	see also 9919 line
9926	HIPK1	NM_152696.3	2267	aagctgtacaccactatggttag	28210	503478	see also 9919 line
9927	MGC27076	NM_152699.2	448	gtgctactcaaaattgttagtac	190800	584346	-
9928	MGC27076	NM_152699.2	2129	aagtcactggctctctactact	190834	584387	see also 9927 line
9929	MGC27076	NM_152699.2	2131	gtccactggctctctctactact	190835	584388	see also 9927 line
9930	ITM1	NM_152713.2	1292	agctgtaattggtgctctaagtc	211437	600243	oligosaccharyl transferase
9931	FLJ25530	NM_152722.3	879	ctggaatacatggatcagaatga	420090	786284	-
9932	FLJ34588	NM_152726.1	620	ctgcagaagatcataagtaaac	145980	542647	-
9933	CPNE2	NM_152727.4	1145	ctcatgtccactggatggaataga	420115	769721	-
9934	CPNE2	NM_152727.4	1757	gagttccgcacgcagcaaaaga	420126	769726	see also 9933 line



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9935	BTBD9	NM_152733.1	1453	tgtgaatgggacactaagaat	129491	530823	-	-	-
9936	BTBD9	NM_152733.1	1460	tgggacactaagaattatgact	129492	530825	see also 9935 line	-	-
9937	MGC33993	NM_152737.1	561	atgcctacaagatcatagact	420280	809137	-	-	-
9938	MGC33993	NM_152737.1	660	tagcctgccgatgacaacaaca	420285	809138	see also 9937 line	-	-
9939	MGC33993	NM_152737.1	671	atgacaacaacatccttgaac	420286	809139	see also 9937 line	-	-
9940	H0XA9	NM_152739.2	455	cgccctattggcattaaacctga	5086	444739	transcriptional or	transcriptional activator	leukemia(白血病)
9941	SDK1	NM_152744.2	1704	gtgctctgtccggattcctagg	420346	800074	-	-	-
9942	FLJ131340	NM_152748.2	1397	gtgaagattattctatcacagc	420475	777698	-	-	-
9943	FLJ131340	NM_152748.2	1820	atgctctgtgtacacaacaatat	420484	777711	see also 9942 line	-	-
9944	FLJ131340	NM_152748.2	1872	caggctcagatgattacacaatat	420489	777716	see also 9942 line	-	-
9945	FLJ131340	NM_152748.2	1874	gggtcagatgattacacaatat	420490	777718	see also 9942 line	-	-
9946	MGC33190	NM_152749.2	198	ctccgacaatgtagattagaag	420518	732724	-	-	-
9947	MGC33190	NM_152749.2	247	agggaggttatgaggcttaataa	420520	732725	see also 9946 line	-	-
9948	SEMA3D	NM_152754.1	1250	gtcacggttgagatacaagaact	420644	685499	receptor activity	-	-
9949	SEMA3D	NM_152754.1	1252	cacggttgagatacaagaactac	420645	685500	see also 9948 line	-	-
9950	SEMA3D	NM_152754.1	1267	aagactacatccaaatccttagc	420646	685502	see also 9948 line	-	-
9951	MGC33510	NM_152765.2	427	ctgtgtgggaatcgagcatatgg	420882	801489	-	-	-
9952	MGC33302	NM_152778.1	360	tgggttattgtctcatagtct	273839	655341	-	-	-
9953	MGC33302	NM_152778.1	1125	aagattggcgagcgctgctattct	273863	655367	see also 9952 line	-	-
9954	LOC14942	NM_152835.1	300	gccagccaaagtacagatctaata	88585	495919	kinase-related	-	-
9955	LOC14942	NM_152835.1	302	cagccaaagtacagatctaatac	88586	495920	see also 9954 line	-	-
9956	LOC14942	NM_152835.1	340	tagttacggtgtgtgtatgaag	88588	495921	see also 9954 line	-	-
9957	LOC14942	NM_152835.1	451	ctggcactaaagcagttatcaaga	88591	495929	see also 9954 line	-	-
9958	LOC14942	NM_152835.1	536	aagatgtccacagcgtctaatc	88595	495933	see also 9954 line	-	-
9959	LOC14942	NM_152835.1	1192	tggcggaatgaacaactgatta	88605	495950	see also 9954 line	-	-
9960	MGC3794	NM_152902.2	444	tggacctatacaacagattataa	421545	756823	-	-	-
9961	MGC3794	NM_152902.2	498	aaggtgtacctacacacagatca	421546	756826	see also 9960 line	-	-
9962	MGC3794	NM_152902.2	506	acctacaacagatcatatagata	421547	756828	see also 9960 line	-	-
9963	MGC3794	NM_152902.2	737	gacctacatgttacgagaatata	421555	756833	see also 9960 line	-	-
9964	MGC3794	NM_152902.2	738	acctacatgttacgagaatatac	421556	756834	see also 9960 line	-	-
9965	MGC3794	NM_152902.2	804	tccctctcacggaacctaatga	421559	756839	see also 9960 line	-	-
9966	MGC3794	NM_152902.2	810	ttcacggaacctaatgaatatac	421560	756841	see also 9960 line	-	-
9967	DRB1	NM_152945.1	551	atggagatcagagtattgcagc	60458	483927	-	-	-
9968	DRB1	NM_152945.1	559	atcgagattgcagcattattaa	60459	483928	see also 9967 line	-	-
9969	DRB1	NM_152945.1	1004	tagcatcagctattatgcacaaa	60482	483953	see also 9967 line	-	-
9970	LOC12928	NM_152994.2	365	cagttgcaatttcgaattatgc	421696	735260	-	-	-
9971	SIAT7C	NM_152996.1	318	cccttgaactcactatgatac	212806	601196	-	-	-
9972	SIAT7C	NM_152996.1	325	aactcactatgatacataaatg	212808	601197	see also 9971 line	-	-
9973	SIAT7C	NM_152996.1	843	ttcacgtctacaggatgataaat	212825	601210	see also 9971 line	-	-
9974	KCTD7	NM_153033.1	577	tgggaactcatgcccattataaaa	132806	536790	channel	-	-
9975	AEBP2	NM_153207.2	905	aagtgaacacacatcagttataaaa	422139	454604	-	-	-
9976	FLJ33761	NM_153211.1	898	aagccccccttagctacattagc	422161	734145	-	-	-
9977	FLJ33761	NM_153211.1	1770	ctctggctacgactgttgaaaca	422195	734168	see also 9976 line	-	-

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9978	FLJ33990	NM_153226.1	261	ctgagctggctgtttttacaca	328803	694535	-	-
9979	FLJ36812	NM_153260.1	611	atgaatctgaaaaaactagaga	422679	717700	-	-
9980	SYT14	NM_153262.1	43	gtgagtagacatgaacttatgt	275020	806265	-	-
9981	SYT14	NM_153262.1	269	tgtgttcactctgaaagtgaag	275027	806274	see also 9980 line	-
9982	SYT14	NM_153262.1	1358	cagaccacccatacatatgta	275055	806295	see also 9980 line	-
9983	FLJ35827	NM_153265.1	588	ctgagctcggggaggagcaattac	422736	754573	-	-
9984	FLJ35827	NM_153265.1	589	tggatctcggaggaggagcaattaca	422737	754574	see also 9983 line	-
9985	MAMDC2	NM_153267.3	1139	accgtggaaatcccaatgtgaac	328913	693998	-	-
9986	KCTD6	NM_153331.2	402	gagactggggctctatgatgaat	132773	536771	channel	-
9987	KCTD6	NM_153331.2	540	gagacctcaaggagcaattacttt	132778	536776	see also 9986 line	-
9988	LYK5	NM_153335.3	470	aacctagaagctgtttccaatga	88833	488635	kinase_related	-
9989	MGC46534	NM_153340.2	1280	gccagagatgctatgttttagc	422805	786187	-	-
9990	MGC33214	NM_153354.2	136	taggtatcacgctgtttgttacc	422973	786236	-	-
9991	MGC33214	NM_153354.2	712	gacttgaacacaggggtttacaat	422991	786253	see also 9990 line	-
9992	C6orf158	NM_153362.1	428	gagaatggcaccggaacccctaac	181698	574813	-	-
9993	FLJ90013	NM_153365.1	1258	gagtgtaacagctcacttaataa	423096	784388	-	-
9994	PLI6	NM_153370.1	547	gtcgtgtggggccacacaaggg	223636	584545	-	-
9995	HS6ST3	NM_153456.1	26	tggatgaagggttcaacaagtgg	218818	606664	-	-
9996	MYCD	NM_153604.1	2105	ttccatccccaactttttctaag	33091	468256	transcription_regulat	-
9997	LOC15322	NM_153607.1	567	gggaacagtgaggatatacatctgt	30762	454388	or	-
9998	LOC15322	NM_153607.1	1933	agccagatgaagctgaataaag	30796	454413	see also 9997 line	-
9999	LOC15322	NM_153607.1	2078	aagctgaatctctcttaataaga	30802	454422	see also 9997 line	-
10000	LOC15322	NM_153607.1	2124	ggcaaacctcagaattgttaac	30804	454424	see also 9997 line	-
10001	SEMA6D	NM_153617.1	2161	ttcaactacccagagatacaaaa	320904	816402	receptor_activity	-
10002	OPNE8	NM_153634.2	351	aagagagaatctctgttttgact	423415	719103	-	-
10003	SLOC24A4	NM_153646.1	1774	ttctccataatgatagagtttaa	327419	691231	-	-
10004	MLR1	NM_153686.4	154	ctgtgtaggttttgagagatttt	423476	658021	-	-
10005	MLR1	NM_153686.4	683	cagcaaggaggatggaggtgttga	423493	657984	see also 10004 line	-
10006	MLR1	NM_153686.4	919	gagctgaacagttcataaccaaa	423501	658029	see also 10004 line	-
10007	LOC91526	NM_153697.1	186	ttgtcaggagctcgtgttaaatgc	423582	799591	-	-
10008	STRC	NM_153700.2	2988	aggacgggtggcatatgaacttc	423667	746549	-	-
10009	STRC	NM_153700.2	2991	acgggtggcatatgaactctgg	423668	746550	see also 10008 line	-
10010	MGC10084	NM_153702.1	692	agggtattcttatgcattagttg	423700	803732	apoptosis	-
10011	MGC10084	NM_153702.1	693	gggtattcttatgcattagttgg	423701	803733	see also 10010 line	-
10012	MGC10084	NM_153702.1	725	tacagagatggcttatagcttac	423703	803735	see also 10010 line	-
10013	MGC26979	NM_153704.2	1303	aactcggcgcattttcttagtgg	282059	799863	-	-
10014	MGC26979	NM_153704.2	1316	ttcttagtgatgcagtaagtgg	282060	799864	see also 10013 line	-
10015	MGC26979	NM_153704.2	1644	gtcccatgattgattacagaca	282069	799880	see also 10013 line	-
10016	C6orf188	NM_153711.1	620	taggtatgctcctgattgttca	423833	804810	-	-
10017	TTL	NM_153712.2	619	agggaacgcttttgattgcaaaag	231870	616780	-	-
10018	TTL	NM_153712.2	620	gggcaacgcttttgattgcaaaag	231871	616781	see also 10017 line	-
10019	TTL	NM_153712.2	863	ttcagaacatcatcattgttga	231880	616788	see also 10017 line	-
10020	RTN4	NM_153828.1	722	ctcgggctcagtgctgtttgacc	135481	540177	apoptosis	protein binding

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10021	GPR110	NM_153840.1	1598	aagatgtgtgttgcttaactgg	242741	630241	receptor_activity, gpcr, signal_transduction	-
10022	CSE-C	NM_170601.1	67	gacagaagtgcaggtatgtgtt	423958	591741	-	-
10023	TOFL4	NM_170607.2	337	gtgtagtggtccagagctaatagc	13041	468964	transcription_regulation	-
10024	WDR17	NM_170710.2	352	tttgatcacogtataatagaatt	423971	577957	-	-
10025	WDR17	NM_170710.2	1056	aagaacaacacattatgataatc	423991	577989	see also 10024 line	-
10026	WDR17	NM_170710.2	1613	ttgctggagtcataaagattct	424011	578011	see also 10024 line	-
10027	WDR17	NM_170710.2	1925	cogttcgaattctgggattatact	424025	578030	see also 10024 line	-
10028	WDR17	NM_170710.2	4100	ctggaaatcacactcaatccattc	424112	578134	see also 10024 line	-
10029	RAB39B	NM_171998.1	490	tacaogttcagcctaccacatt	110266	518362	signal_transduction	-
10030	RAB39B	NM_171998.1	566	togccacgagggccgagaaactgg	110268	518365	see also 10029 line	-
10031	RAB39B	NM_171998.1	590	tgtcgtcaacagcatgaagtaca	110269	518366	see also 10029 line	-
10032	RAB39B	NM_171998.1	672	gacatatatgagctgggttaaaag	110274	518367	see also 10029 line	-
10033	RDH10	NM_172037.1	1201	tcttaggagcggacaagtgtatg	227316	614614	-	-
10034	EYA4	NM_172105.1	2186	aagctgttttgagcgtatagtgt	205107	595862	phosphatase, transcription_regulation	-
10035	EYA4	NM_172105.1	2196	gagcgtatagtgtccagatttgg	205108	595863	or hydrolase	-
10036	EYA4	NM_172105.1	2207	gtccagatttggcactaacataa	205109	595864	see also 10034 line	-
10037	EYA4	NM_172105.1	2208	tccagatttggcactaacataac	205110	595865	see also 10034 line	-
10038	KGNAB1	NM_172159.1	521	tagcgtcacagagcacacaatttg	260932	644278	channel	-
10039	KLHDC1	NM_172193.1	113	ggggagctacgtgtctattgaaga	424273	801025	-	-
10040	KLHDC1	NM_172193.1	115	gggctacgtgtctattgaagaca	424274	801026	see also 10039 line	-
10041	KLHDC1	NM_172193.1	119	tacgtgtctattgaagacaatga	424275	801027	see also 10039 line	-
10042	TFAP2BL1	NM_172238.1	566	atcaaacagctaccgtttgatgc	13119	449425	transcription_regulation	-
10043	TFAP2BL1	NM_172238.1	839	gccaccgactttataacctgc	13120	449431	or	-
10044	KCNH1	NM_172362.1	1134	atgggtgatccagggaagattgg	121480	526655	see also 10042 line	-
10045	KCNH1	NM_172362.1	1138	gtgatccagggaagattggtttt	121481	526656	channel, signal_transduction	-
10046	ELF1	NM_172373.2	344	ttctggtgtgtattcttcaat	3007	443212	hematopoietic-transcription_regulation	-
10047	SCUBE1	NM_173050.1	494	cgcgtccaatgagggtatgaact	152885	553763	or associated factor 1B complex	-
10048	SCUBE1	NM_173050.1	613	accagaggagctgcacactaac	152886	553764	receptor_activity	-
10049	ABCA12	NM_173076.2	386	tacctgcacctgagaaccttcc	68328	786481	see also 10047 line	-
10050	SHPRH	NM_173082.1	1432	aactctactataatccatataca	39251	466905	-	ichthyosis congenita(先天性鱼鳞症)
10051	SHPRH	NM_173082.1	1434	ctctactataatccatatocagg	39252	466906	transcription_regulation	-
10052	SHPRH	NM_173082.1	2783	acggaaaccaggaagcgctatagg	39284	466939	or	-
10053	SHPRH	NM_173082.1	2837	gtgagagatctgccttgatgaag	39285	466940	see also 10050 line	-
10054	SHPRH	NM_173082.1	2838	tggagagatctgccttgatgaagc	39286	466941	see also 10050 line	-

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10055	SHPRH	NM_173082.1	3978	cagttcttacttaacacacaat	39322	466990	see also 10050 line
10056	SHPRH	NM_173082.1	4162	cagagtagtaaatcaagctattt	39328	466994	see also 10050 line
10057	SHPRH	NM_173082.1	4300	cagagcgtctatgaagaata	39332	467002	see also 10050 line
10058	SHPRH	NM_173082.1	4953	gtggtcagaactctgatgaat	39351	467027	see also 10050 line
10059	SHPRH	NM_173082.1	5015	aacgtggcaagatgtattagata	39355	467034	see also 10050 line
10060	SHPRH	NM_173082.1	5016	acgtggcaagatgtattagatat	39356	467035	see also 10050 line
10061	TGS	NM_173083.2	665	cagaagattgttttctgattacg	424721	786208	-
10062	TPH2	NM_173353.2	1435	atggaggagctttgcaagtaaat	164568	562360	-
10063	TPH2	NM_173353.2	1437	gaggagactttgcaagtaaat	164569	562361	see also 10062 line
10064	SNF1LK	NM_173354.1	242	accataaacgcaggttgcaataaa	100934	515081	kinase, related
10065	UPP2	NM_173355.2	339	cacaacctaccagcaattgttg	237471	740332	-
10066	LOC93380	NM_173470.1	369	cagctgcagcagcatgcttctata	424887	761440	-
10067	LOC93380	NM_173470.1	371	ctgcgcagcatgcttcttattatg	424888	761441	see also 10066 line
10068	LOC93380	NM_173470.1	372	tgcgcagcatgcttcttattatgc	424889	761442	see also 10066 line
10069	MGC48972	NM_173475.1	733	cgggttcctagcctcttaacaga	424932	783432	-
10070	MGC48972	NM_173475.1	779	aggatctctaccgggtttacattt	424935	783433	see also 10069 line
10071	LSM11	NM_173491.1	664	ctgactctcactagctgctattga	46321	471148	-
10072	LSM11	NM_173491.1	666	gactctcactagctgctattgatc	46322	471149	see also 10071 line
10073	TIBK2	NM_173500.2	834	ttagcttgcttcgacaaattacc	103671	517145	kinase, related
10074	TIBK2	NM_173500.2	2449	atcagttgttgacaaatagatca	103684	517157	see also 10073 line
10075	SILC35F3	NM_173508.1	1424	tccgggtcatcgccatcatcatc	425222	662643	-
10076	MGC16664	NM_173509.2	415	gtgatcacctggcgggaatcctagc	425227	799616	-
10077	FLJ33814	NM_173510.1	582	gagattgagacagaggaataattga	425238	750268	-
10078	FLJ90709	NM_173514.1	1318	tgccttatgtctgtgacattaa	259561	641631	-
10079	FLJ90709	NM_173514.1	1536	gccatattctcagtgacatttat	259565	641639	see also 10078 line
10080	FLJ38964	NM_173527.1	758	cogctccgggaggtatcaactgg	27399	465840	signal, transduction
10081	MGC47799	NM_173545.1	239	cagaagacatgccattcttgagg	425780	715098	-
10082	LOC20129	NM_173547.2	1016	ggcagaattatcgcaatctgacc	425835	555130	-
10083	RFXDC1	NM_173560.1	1120	tgggaacacagtggtgtgtttcatc	38588	466298	transcription, regulat
10084	RFXDC1	NM_173560.1	1708	cagaatttatggacaagtatat	38607	466322	or see also 10083 line
10085	C10orf48	NM_173576.1	528	acgctagtgcaaggtgtcaaatg	1852	796993	or
10086	C10orf48	NM_173576.1	529	cgcctagtgcaaggtgtcaaatgg	1853	796994	see also 10085 line
10087	C10orf48	NM_173576.1	621	aagttatacaacaagtattgttca	1861	797003	see also 10085 line
10088	C10orf48	NM_173576.1	852	agcttgtgaacoggtacccttaa	1867	797010	see also 10085 line
10089	FLJ35894	NM_173616.1	428	ggggaattgggtgtgtgtgtgtt	426532	453706	-
10090	FLJ35894	NM_173616.1	819	ctgtgtcaacaatcctcaaatg	426546	453728	see also 10089 line
10091	FLJ90652	NM_173618.1	343	cggaggagacacccaagtgtct	426583	770685	-
10092	RTTN	NM_173630.2	1797	accaagccttgcgtagcttttcc	426747	685199	-
10093	RTTN	NM_173630.2	1800	aagccttgcgtagcttttctctat	426748	685200	see also 10092 line
10094	RTTN	NM_173630.2	2163	ttcaggagacattgatgatgaca	426758	685213	see also 10092 line
10095	RTTN	NM_173630.2	2276	tgcattctcttctaagcaagc	426759	685218	see also 10092 line

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10096	RTTN	NM_173630.2	3154	atgtatcatcaggagtgataatc	426789	685256	see also 10092 line
10097	RTTN	NM_173630.2	3155	tgtatcatcaggagtgataatc	426790	685257	see also 10092 line
10098	RTTN	NM_173630.2	4388	caggaatctctgttaattccaat	426831	685282	see also 10092 line
10099	RTTN	NM_173630.2	5115	tgaatcactctctcttctgtcc	426852	685299	see also 10092 line
10100	RTTN	NM_173630.2	5845	tgcattcagactccttaagaaact	426870	685317	see also 10092 line
10101	FLJ90805	NM_173633.1	1222	atggcgtttcttgatcagacc	426914	809624	-
10102	MGC47816	NM_173642.1	982	gaccaggcatgcaacttagatgt	302193	670729	-
10103	SLC9A9	NM_173653.1	1318	tggagccttctagcaattttt	258349	642580	-
10104	MGC34132	NM_173654.1	1272	cacagaataccgggaaatcctta	427111	787957	-
10105	MGC34132	NM_173654.1	1400	cacacaacacgggacatatattt	427121	787966	see also 10104 line
10106	DKFZp434						
10106	C1418	NM_173655.1	592	ttgcgttcccggaattaaac	78264	501848	-
10107	DKFZp434						
10107	C1418	NM_173655.1	593	tgcgttcccggaattaaac	78265	501849	see also 10106 line
10108	DCBLD1	NM_173674.1	276	ggcacaaatgacatctaagatta	318788	717960	-
10109	LOC28604	NM_173683.2	595	tagggatcgtgacattttctgc	427363	783253	-
10110	FLJ32440	NM_173685.1	803	cgcattgttcgcatgattgagt	427413	727061	-
10111	FLJ36664	NM_173690.1	958	acgcactcattatggttaattgt	427477	804186	-
10112	FLJ36664	NM_173690.1	1571	tccttaattggccttctatttg	427499	804207	see also 10111 line
10113	FLJ36664	NM_173690.1	1831	cacaaactgcaagaggatgaacaa	427506	804216	see also 10111 line
10114	MGC51029	NM_173794.2	155	ccctcccaagactatgaagt	427968	732213	-
10115	MGC51029	NM_173794.2	260	cgggacactatgtagaaaaatc	427973	732223	see also 10114 line
10116	NEGR1	NM_173808.1	532	ctcccatcagcaaaaccatttg	428179	794574	-
10117	MGC39518	NM_173822.1	364	agctgtttgagctctatcgtgc	428344	774971	-
10118	MGC39518	NM_173822.1	1377	gagagccctcagattcagtagt	428374	775003	see also 10117 line
10119	MGC39518	NM_173822.1	1736	gtctcagatcccaagtttcaata	428388	775018	see also 10117 line
10120	MGC39518	NM_173822.1	1738	ctcagatcccaagtttcaatag	428389	775019	see also 10117 line
10121	MGC39518	NM_173822.1	1742	atccccaagtttcaatgcagc	428390	775021	see also 10117 line
10122	KCP2	NM_173852.2	396	tgttggtctgtactacatcaac	428501	715865	-
10123	HOXC12	NM_173860.1	395	cgcctgcgtcggcttcaagtac	5173	444784	transcription_regulat
10124	BPIL3	NM_174897.1	1306	ctggctgagctggacatagtaga	173355	816555	or transcription factor -
10125	UBR1	NM_174916.1	84	gtgggatcagcaagttgattttt	231473	541972	-
10126	UBR1	NM_174916.1	1095	tgccttgatagctcttctatgaat	231501	542009	-
10127	UBR1	NM_174916.1	1847	ctggtttctatcagcttgaagc	231522	542032	see also 10125 line
10128	UBR1	NM_174916.1	2524	cagcatagcaagctgaacatcat	231537	542054	see also 10125 line
10129	UBR1	NM_174916.1	2947	gacacagtgaagcgattgaagaga	231551	542065	see also 10125 line
10130	UBR1	NM_174916.1	4613	gtgcactctgtagctatctatct	231613	542106	see also 10125 line
10131	UBR1	NM_174916.1	4750	gtgtcagtagctaccctagaanaag	231620	542112	see also 10125 line
10132	UBR1	NM_174916.1	4751	tgttcagtagctaccctagaanaag	231621	542113	see also 10125 line
10133	PCSK9	NM_174936.2	1084	ctcataggctcgtggtttattctg	183183	576881	-
10134	MGC20553	NM_174938.3	531	gtgaacattctaccacatgaacc	192136	687129	-
10135	MGC20553	NM_174938.3	1905	gagtttgagcaggtttcactatga	192160	687162	see also 10134 line
10136	C14orf39	NM_174978.1	330	tgaagccaacatgtagtatttt	428838	739069	-

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10137	C14orf39	NM_174978.1	333	aagcaacatgtatgttttgc	428839	739070	see also 10136 line
10138	C14orf39	NM_174978.1	549	gtgtggcatgtactgaacaatt	428850	739075	see also 10136 line
10139	C14orf39	NM_174978.1	1237	cagtaagaagaatgaagaatca	428871	739100	see also 10136 line
10140	C14orf39	NM_174978.1	1591	cagatcatttaattgaacattat	428883	739115	see also 10136 line
10141	LOC13136	NM_175056.1	345	cagatctggcactgaatgaagg	428917	803417	-
10142	LOC13136	NM_175056.1	585	tactggcctttttacaatt	428925	803420	see also 10141 line
10143	LOC13136	NM_175056.1	590	ggcctttttacaatttaattg	428926	803423	see also 10141 line
10144	LOC13136	NM_175056.1	717	tgcctttttacaatttaattg	428934	803433	see also 10141 line
10145	CNTN4	NM_175607.1	1314	gagcaaggagaacactcaataac	429101	498547	-
10146	CNTN4	NM_175607.1	1482	gtgagaggtgaattgttoattga	429106	498558	see also 10145 line
10147	CNTN4	NM_175607.1	1885	aggattcagctgtgatttgatg	429118	498570	see also 10145 line
10148	CNTN4	NM_175607.1	1944	gtctgcacatgtccaacaagtgt	429119	498572	see also 10145 line
10149	LOC15283	NM_175737.2	126	caggaatgaatggattttcttc	202946	593517	-
10150	LOC15283	NM_175737.2	786	gggaacgtgtcaaatatggatt	202972	593536	see also 10149 line
10151	LOC15283	NM_175737.2	788	gaccgtgtcaaatattggattac	202973	593537	see also 10149 line
10152	LOC15283	NM_175737.2	789	accgtgtcaaatattggattaca	202974	593538	see also 10149 line
10153	LOC15283	NM_175737.2	792	gtgtcaaatattggattacaatt	202975	593539	see also 10149 line
10154	PAN3	NM_175854.4	1751	tagcaaatgtggaacaacatcaat	429353	733821	kinase_related
10155	KIS	NM_175866.1	902	aacagctctgtattattgatca	52358	473963	kinase_related
10156	KIS	NM_175866.1	904	cagttctgtctattattgatcaca	52359	473964	see also 10155 line
10157	MGC45594	NM_175907.2	399	aacgcattcgcactcaactattc	157844	557137	-
10158	MGC45594	NM_175907.2	400	acgcactgcactcaactattc	157845	557138	see also 10157 line
10159	MGC50831	NM_175924.2	276	tggagacatggcgctcaagtc	148404	750792	-
10160	KENAE	NM_176816.2	830	aggccctgcgcactgttgatcc	429790	808429	-
10161	KENAE	NM_176816.2	833	cctctgcactgttgatatacaaa	429791	808431	see also 10160 line
10162	STX12	NM_177424.1	770	agctgtactatcagaaaaaat	270893	652729	-
10163	PAQR3	NM_177453.2	641	ctgctatgtctcaggagattttt	327123	813301	receptor_activity
10164	KIAA1946	NM_177454.2	2179	ctcctttatagaccctgaaaaagg	29891	634735	-
10165	KIAA1946	NM_177454.2	2536	aagagatagcaagactaacatct	29897	634745	see also 10164 line
10166	PKHD1L1	NM_177531.2	377	tgcagctcattcaactcaattia	429895	628565	-
10167	PKHD1L1	NM_177531.2	3225	caggtgaagtctatgtcaatgg	430000	628673	see also 10166 line
10168	PKHD1L1	NM_177531.2	10323	tggcatgcagcaatgagataaa	430192	628906	see also 10166 line
10169	PKHD1L1	NM_177531.2	11242	taggaattggagactacagaatt	430215	628946	see also 10166 line
10170	PKHD1L1	NM_177531.2	12511	atggccttattggaaatacaaca	430264	628996	see also 10166 line
10171	PKHD1L1	NM_177531.2	12513	ggccttagtggaaatacaacaat	430265	628997	see also 10166 line
10172	ALEX2	NM_177949.1	2016	accagcaactctgtgtcaattcc	430283	721725	-
10173	SYT12	NM_177963.2	87	accatctgagcgtcatcaagc	274999	657548	-
10174	DSG4	NM_177986.2	277	aagcggaggtggatcaagttgc	142532	806365	-
10175	DSG4	NM_177986.2	813	cagagagagaacacagatgtaca	142552	806378	see also 10174 line
10176	OTOP1	NM_177998.1	1764	tggctttgaacctggataattg	430367	777766	-
10177	OTOP1	NM_177998.1	1765	ggcctttgaacctggataattgt	430368	777767	see also 10176 line
10178	OTOP1	NM_177998.1	1841	ccctcttgaggctctattgaag	430370	777771	see also 10176 line
10179	LOC16242	NM_178126.2	746	gtgtcgtggctacatgatgcc	430483	725582	-
10180	FUT8	NM_178154.1	737	ctgtcttcctggcgttgattatg	210774	599611	-

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10181	FUT8	NM_178154.1	738	tggctcctggcggttgattatgc	210775	599612	see also 10180 line		
10182	FUT8	NM_178154.1	741	ttcttggttggttatgtctca	210776	599613	see also 10180 line		
10183	URB	NM_178274.2	628	aggctactaccgctcactatga	430847	725061	-	-	
10184	URB	NM_178274.2	2301	tggatctgagagtgcaagaatac	430669	725081	see also 10183 line		
10185	URB	NM_178274.2	2377	gtcccggaatcaagatataggaga	430675	725087	see also 10183 line		
10186	URB	NM_178274.2	2873	gggatgcgtgcccgagaagatga	430681	725101	see also 10183 line		
10187	SPTBN1	NM_178313.1	438	cggggcagggtgccttaacactac	119355	524150	-	structural constituent of cytoskeleton	-
10188	SPTBN1	NM_178313.1	6754	gggatctccacgggttagttacc	119357	524256	see also 10187 line		
10189	MGC48332	NM_178450.2	445	caccagagcccttcaatgacc	265489	648571	-	-	-
10190	MGC54289	NM_178454.1	201	tgagtaagtgcaacttagcatgc	430771	720832	-	-	-
10191	MGC54289	NM_178454.1	416	aagccaattacatggattaacc	430783	720838	see also 10190 line		
10192	MGC54289	NM_178454.1	428	atggattaacctctatgacact	430784	720839	see also 10190 line		
10193	LOC15196	NM_178496.2	779	ttgatgaggagacaatcagtaaa	430865	798399	-	-	-
10194	LOC15196	NM_178496.2	1360	tacttggtcgaagaagactatgc	430885	798412	see also 10193 line		
10195	PIGW	NM_178517.2	1275	taccatgtcttggaacttatc	431042	729250	-	-	-
10196	FLJ25770	NM_178555.2	805	ttgggtcagctattatgaataat	431235	794249	-	-	-
10197	FLJ25770	NM_178555.2	807	gggtcagctattatgaataat	431236	794251	see also 10196 line		
10198	MGC50844	NM_178562.2	279	tcgtcagcccgctgtggaataac	431285	691344	-	-	-
10199	MGC50844	NM_178562.2	283	cagcccgctggtgaataactgc	431286	691345	see also 10198 line		
10200	ZDHHC21	NM_178566.2	907	tacttctacgactgatgtttt	431320	726525	-	-	-
10201	LYRIC	NM_178812.2	899	gcctgggaactaaataatagtc	431342	720726	-	-	-
10202	LYRIC	NM_178812.2	970	tgttcaattggttaactatcc	431344	720729	see also 10201 line		
10203	LYRIC	NM_178812.2	985	aactatccctggatgagaaata	431345	720730	see also 10201 line		
10204	LYRIC	NM_178812.2	1089	atgttaagttagcaactttaaa	431347	720734	see also 10201 line		
10205	LYRIC	NM_178812.2	1400	cagttaccactctgtattatca	431354	720741	see also 10201 line		
10206	LYRIC	NM_178812.2	1402	gtctaccactctgtattatcagt	431355	720742	see also 10201 line		
10207	LYRIC	NM_178812.2	1423	gtaggatgttagccgtaatacaac	431356	720744	see also 10201 line		
10208	LYRIC	NM_178812.2	2001	cacagaccagctctgaactatgc	431372	720762	see also 10201 line		
10209	CKLFSF4	NM_178818.2	628	cagaaattgctccggtgatattt	328584	694512	-	-	-
10210	DKFZp586	NM_178819.2	1149	gcctacaccacaacgggaatcattg	216248	603458	-	-	-
10211	DKFZp586	NM_178819.2	1155	caccaacgggaatcattgcaaaagg	216250	603459	see also 10210 line		
10212	DKFZp586	NM_178819.2	1211	tttgtgaagtggttagtagtaag	216252	603461	see also 10210 line		
10213	DKFZp586	NM_178819.2	1212	tcgtcgaagtgttagtagtaagg	216253	603462	see also 10210 line		
10214	TMEM16D	NM_178826.2	416	gtggccaagagtgatcaattctt	431783	804105	-	-	-
10215	TMEM16D	NM_178826.2	704	gagaaagagtcctctcttaataaa	431787	804117	see also 10214 line		
10216	TMEM16D	NM_178826.2	710	gagtcctcttaataataatgtga	431788	804119	see also 10214 line		
10217	TMEM16D	NM_178826.2	717	ccttaataaatagacattatc	431790	804120	see also 10214 line		
10218	TMEM16D	NM_178826.2	727	tagtgacattatctttgtgaagt	431791	804121	see also 10214 line		

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10219	TMEM16D	NM_178826.2	848	ttcatgagcaggatcgataaaca	431792	804123	see also 10214 line		
10220	TMEM16D	NM_178826.2	851	atgacagagatcgataaacaat	431793	804124	see also 10214 line		
10221	TMEM16D	NM_178826.2	1141	tccctcgtcatgagggaagtata	431799	804135	see also 10214 line		
10222	LOC11881	NM_178832.2	382	gcgtcggagctcttcattcgatat	431994	811892	-	-	-
10223	SEZ6	NM_178860.2	2282	gccacttoagagcttcttaccctcc	432039	710940	-	-	-
10224	SEZ6	NM_178860.2	2615	agcacagtcgagcgcctcatccc	432041	710944	see also 10223 line		
10225	KCTD13	NM_178863.2	431	cggaggttggtgctgattgacc	132667	536640	channel	-	-
10226	KCTD13	NM_178863.2	718	accgagtaacaacaagtaactcc	132670	536643	see also 10225 line		
10227	NXF	NM_178864.2	2504	tactgatgattgcatcaactcc	254728	639291	signal_transduction	-	-
10228	ARHGAP8	NM_181333.1	232	tccgagattgaagttcatgagt	297661	759769	-	-	-
10229	ARHGAP8	NM_181334.1	636	gccctcatcagtoacaagtttg	297669	665127	-	-	-
10230	OXR1	NM_181354.2	1750	aaggcatcgattacataagttct	282887	671236	-	-	-
10231	PAX3	NM_181457.1	1216	atggtttcaaccatctcttacc	8880	447553	transcription_regulat or, apoptosis	-	rhbdomyosarcoma(胞巣状横紋筋肉腫)、 alveolar rhabdomyosarcoma(胞巣状横紋筋肉 腫)、craniofacial-deafness-hand syndrome(頭蓋 顔面異骨症)、Waardenburg syndrome(ワールデ ンブルグ症候群)
10232	ZNF445	NM_181489.3	2745	cagatggagttccaatctcttacc	432164	783023	transcription_regulat or	-	-
10233	OIP2	NM_181503.1	57	ctggagattaccagagatttct	53127	472641	-	-	-
10234	OIP2	NM_181503.1	514	tacattgctcgaagtactata	53138	472659	see also 10233 line	-	-
10235	MRPL21	NM_181512.1	130	ttctcgaaggttcaattcacaga	432372	473194	-	-	-
10236	MRPL21	NM_181512.1	429	tggctgggagcagacaacttcacg	432378	473200	see also 10235 line	-	-
10237	PKD1L3	NM_181536.1	2681	ggcatccctcgggaaccagtttaca	432503	806191	channel, signal_transduction	-	-
10238	CUTL1	NM_181552.1	1402	agcggggttaagtcaagactttt	2644	442858	transcription_regulat or	RNA polymerase II	
10239	CUTL1	NM_181552.1	1403	gcggggttaagtcaagactttt	2645	442859	see also 10238 line	transcription factor	leiomyoma(血管筋腫)
10240	CUTL1	NM_181552.1	1404	cggggttaagtcaagacttttc	2646	442860	see also 10238 line	-	-
10241	CUTL1	NM_181552.1	1405	ggggttaagtcaagacttttca	2647	442861	see also 10238 line	-	-
10242	CUTL1	NM_181552.1	3605	tggctgaacgaccccaacaatgt	2664	442889	see also 10238 line	-	-
10243	AUP1	NM_181575.2	461	ctgtagcacccctctactcaata	216136	603484	-	-	-
10244	AUP1	NM_181575.2	465	agcacccctctactcaatagtc	216137	603485	see also 10243 line	-	-
10245	PITPNC1	NM_181671.1	1048	tccgggaatacagagaaacatg	271843	673432	signal_transduction	-	-
10246	PITPNC1	NM_181671.1	1049	tccgggaatacagagaaacatgc	271844	673433	see also 10245 line	-	-
10247	OGT	NM_181672.1	250	cacagaaacacgaaacagtgatgc	134303	601967	signal_transduction	-	-
10248	OGT	NM_181672.1	259	aacgaacgtatcttctctcc	134305	601968	see also 10247 line	-	-
10249	LOC14423	NM_181708.1	214	ggctcgacgtggggtgtaactcc	432857	738192	-	-	-
10250	LOC25510	NM_181719.1	845	agctggcctgacaggatacaaga	433013	740863	-	-	-
10251	TMEM13	NM_181744.1	106	tagtggctggcttttaccataaca	433063	807015	-	-	-
10252	GPR120	NM_181745.1	659	tggctattggtatcagttactcc	239414	806944	receptor_activity, gpcr,	-	-
10253	NCOA7	NM_181782.1	2826	gacataagttcttttagaacctgg	303354	774639	signal_transduction	-	-



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10254	NRPS998	NM_181806.1	2317	gtggcgtgttataatggaattagt	433614	611792	-	-	-	-
10255	NRPS998	NM_181806.1	2319	ggcgctgttataatggattagttt	433615	611793	see also 10254 line	transcription_regulat	-	-
10256	C6orf46	NM_181842.1	1151	aggtggaaccccttaaaagaaca	129551	815102	or	-	-	-
10257	BCL6B	NM_181844.2	239	cagtgctctcttattcaattt	129250	456323	-	-	-	-
10258	AMIGO2	NM_181847.2	620	toftcagctgcacacaacaaac	325998	691746	-	-	-	-
10259	CPEB2	NM_182485.1	710	tacccttacaggtagatcattagt	433844	482092	-	-	-	-
10260	CPEB2	NM_182485.1	712	cccttacaggtagatcattagt	433845	482093	see also 10259 line	-	-	-
10261	CPEB2	NM_182485.1	1070	aacgctctctcgaaggttttt	433856	482112	see also 10259 line	-	-	-
10262	CPEB2	NM_182485.1	1341	aogtcttggaatttaagtata	433865	482125	see also 10259 line	-	-	-
10263	USP12	NM_182488.1	266	tcctaatgacagctccaaattc	188824	702789	-	-	-	-
10264	USP12	NM_182488.1	815	gtcttactgtgaactataagc	188846	702808	see also 10263 line	-	-	-
10265	USP12	NM_182488.1	1203	agggcattatttgaattagta	188863	702821	see also 10263 line	-	-	-
10266	FLJ40919	NM_182508.1	240	tgacagaccgctacattcacagc	434021	797393	-	-	-	-
10267	FLJ25161	NM_182522.2	846	tagcagtggaataaagtcacaaa	434154	794293	-	-	-	-
10268	LOC20352	NM_182540.1	819	ttcgttggaataaagggtattt	434254	480282	-	-	-	-
10269	MGC57341	NM_182559.1	571	cagtgagataatgactattt	182419	574799	-	-	-	-
10270	MGC57341	NM_182559.1	573	gtgaggataatgactatttca	182420	574800	see also 10269 line	-	-	-
10271	FLJ36070	NM_182574.1	799	ttggaactcagacccttaaaact	27389	453921	-	-	-	-
10272	SRPK2	NM_182691.1	744	cagtcagctgtgtgaagagatc	101280	515363	-	-	-	-
10273	SRPK2	NM_182691.1	747	tacgtgtgtgaagagatcatt	101281	515364	see also 10272 line	-	-	-
10274	SRPK2	NM_182691.1	748	acgtgtgtgaagagatcattc	101282	515365	see also 10272 line	-	-	-
10275	SRPK2	NM_182691.1	2104	gagcctcttgatgaattgtg	101317	515384	see also 10272 line	-	-	-
10276	FLJ37306	NM_182765.1	754	atggaaaagtcacgaacaaaag	435215	615240	-	-	-	-
10277	FLJ37306	NM_182765.1	1201	ctgtcagtaaccttcgttattt	435227	615254	see also 10276 line	-	-	-
10278	FLJ37306	NM_182765.1	1565	tggtttagcagcttaaatgta	435244	615270	see also 10276 line	-	-	-
10279	NTT73	NM_182767.1	1633	tgctttgtttatggcatagataa	255886	640078	neurotransmitters	-	-	-
10280	CHX10	NM_182894.1	533	agcggcgacacagagacaatttt	2261	442727	odium symporter	-	-	-
10281	CHX10	NM_182894.1	536	ggcgacacagagacaattttacc	2262	442728	see also 10280 line	-	-	-
10282	ERG	NM_182918.1	770	aacacagaggggtgcagctttat	3413	443485	transcription_regulat	-	-	-
10283	ERG	NM_182918.1	772	cacagaggggtgcagctttattt	3414	443486	or, signal_transduction	-	-	-
10284	ADAMTS9	NM_182920.1	4400	ttgtgtagagagagataaacaac	155867	787989	see also 10282 line	-	-	-
10285	FLJ20403	NM_182976.1	438	agcgccttcggagtagttatgg	435563	707220	-	-	-	-
10286	FLJ20403	NM_182976.1	482	ccgggaatagccttgactcttgc	435565	707222	-	-	-	-
10287	FLJ20403	NM_182976.1	536	agcacccttacctccgttcaaat	435566	707223	see also 10285 line	-	-	-
10288	FLJ20403	NM_182976.1	676	atctgaaagtagctgttggagc	435570	707224	see also 10285 line	-	-	-
10289	FLJ20403	NM_182976.1	737	agggcggagggcggagacatatgg	435571	707226	see also 10285 line	-	-	-
10290	GPRK2L	NM_182982.1	325	gtgtgtgttagtaaaaaatggaag	84256	503096	gpcr, kinase_related,	-	-	-
10291	GSTO2	NM_183239.1	1133	acctgtatatcatgattgatta	216673	604901	-	-	-	-
10292	GSTO2	NM_183239.1	1135	ctgtatccatgattgattacc	216674	604902	see also 10291 line	-	-	-

leukemia(白血病), Ewing sarcoma(ユ-イング肉腫), Ewing's sarcoma(ユ-イング肉腫), Ewing's tumours(ユ-イング腫瘍)

10293	GSTO2	NM_183239.1	1299	aggcctcttggaatctctatttt	216678	604904	see also 10291 line		
10294	C6orf145	NM_183373.1	48	gggacagctgcctgtaacatgt	435667	679723	-	-	-
10295	C6orf145	NM_183373.1	51	cagctcgtctgtaacatgttcg	435668	679724	see also 10294 line		
10296	ACGN1	NM_183377.1	1311	ctcaaggagggaacctctactatg	262439	645846	channel	amiloride-sensitive sodium channel	-
10297	BPAG1	NM_183380.1	774	aaggtcgagtcgctttttcacaga	115986	522172	cell_cycle, signal_transduction	structural molecule	epidermolysis bullosa(表皮水疱症)
10298	EML5	NM_183387.1	5458	gtgctattggaatgaaatgg	436019	577653	-	-	-
10299	EML5	NM_183387.1	5736	ctgctataaacggcatgtctatg	436025	577662	see also 10298 line		
10300	EML5	NM_183387.1	5737	tgcataaacggcatgtctatga	436026	577663	see also 10298 line		
10301	EML5	NM_183387.1	6014	cccatgacaaaatatttgattt	436035	577668	see also 10298 line		
10302	EML5	NM_183387.1	6017	atgtgacaaatattcgattacc	436036	577669	see also 10298 line		
10303	OTOF	NM_194248.1	1377	cccggttctatgtgaaatttac	282829	692911	-	-	deafness(聾)
10304	LOC91752	NM_194250.1	2356	tactgttccataaagtagaag	438112	789505	-	-	-
10305	GPR151	NM_194251.1	630	ggagccttatgaccaaattgaaa	239498	623808	-	-	-
10306	DKFZp686L1814	NM_194282.1	1959	tacaaaatcaactgtgttgaaat	436277	777888	-	-	-
10307	FLJ39441	NM_194285.1	1588	ggccctggagagatccataatgg	436339	788043	-	-	-
10308	FRBZ1	NM_194314.1	1715	tacgagaaagactactttgaaa	436778	648522	-	-	-
10309	PLEKH1	NM_194449.1	1414	tggccaataatcaatatgtgaac	237094	621522	-	-	-
10310	PLEKH1	NM_194449.1	3412	cgatgatggggcattgtcatca	237126	621553	see also 10309 line		
10311	LOC25301	NM_198151.1	768	ttctgataaagggtctaaagtag	437132	804770	-	-	-
10312	LOC25301	NM_198151.1	1086	aagtataactggaatactactat	437141	804778	see also 10311 line		
10313	ASTN2	NM_198186.1	1100	aagccctgaaagattctcagc	339027	708542	-	-	-
10314	FAM13C1	NM_198215.1	1636	ttgaccatctccgagaaactagg	437271	715077	-	-	-
10315	LOC25574	NM_198278.1	271	ggagtggcccgaggcaaatagtgt	437457	550663	-	-	-
10316	KCTD8	NM_198353.1	1239	ttctccgaccacctcagaaat	437684	536809	-	-	-
10317	LOC15756	NM_198401.1	500	aggtgctaccctttagtcttgg	437705	785692	-	-	-
10318	PTPLB	NM_198402.1	166	cacggcgtacctgtgtctatca	437709	588893	-	-	-
10319	PTPLB	NM_198402.1	256	tagctaccatagcctttattatt	437711	588898	see also 10318 line		
10320	PTPLB	NM_198402.1	547	atgggcccagggtacacactttca	437716	588711	see also 10318 line		
10321	PAQR10	NM_198403.1	768	tggctgtgtaccactactatg	312143	677631	-	-	-
10322	KCTD4	NM_198404.1	256	acctcaacgttgggtgattt	437730	536724	channel	-	-
10323	KCTD4	NM_198404.1	257	cctcaacgttgggtgattt	437731	536725	see also 10322 line		
10324	KCTD4	NM_198404.1	303	gaccagttaccacacactttcc	437733	536727	see also 10322 line		
10325	KCTD4	NM_198404.1	307	aagtaccacagactttctctga	437734	536728	see also 10322 line		
10326	KCTD4	NM_198404.1	415	gtctaaacttctactcgaatgg	437738	536730	see also 10322 line		
10327	KCTD4	NM_198404.1	563	gagagactactttctggaaata	437743	536734	see also 10322 line		
10328	KCTD4	NM_198404.1	565	gagactactttctggaataaac	437744	536735	see also 10322 line		
10329	KCTD4	NM_198404.1	761	atggcactcgaacttgaactaaag	437754	536743	see also 10322 line		
10330	KCTD4	NM_198404.1	762	tggcactcgaacttgaactaaag	437755	536744	see also 10322 line		
10331	KCTD4	NM_198404.1	882	ttcaaaaggactcaattgtcaca	437759	536750	see also 10322 line		
10332	UNQ8193	NM_198450.1	796	tagatgtacagcactagaagc	437859	725896	-	-	-
10333	PAQR9	NM_198504.1	813	cacactcttctgcaactctacc	438745	813022	-	-	-

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10334	FLJ25621	NM_198514.1	433	atggcagggaactcatcagatgatg	438891	647627	-	-
10335	FLJ25621	NM_198514.1	434	tggcagggaactcatcagatgatg	438892	647628	see also 10334 line	-
10336	FLJ25621	NM_198514.1	838	tacaatcaacagattaaagtgtg	438897	647634	see also 10334 line	-
10337	MGC71806	NM_198516.1	1320	agctgtgtgctccgcgtacctaaat	438939	784162	-	-
10338	ATP9B	NM_198531.2	457	gggtttgtatgaacaattcaag	439241	495395	-	-
10339	FLJ30851	NM_198553.1	229	accocaaatttctgaagttacc	439465	788943	-	-
10340	MGC52022	NM_198563.1	275	gtcgtggaggatattggtttta	439533	736463	-	-
10341	MGC52022	NM_198563.1	378	tgttcaactgtacctcatcaact	439536	736465	see also 10340 line	-
10342	MGC52022	NM_198563.1	711	tgggttagtgacaatttctctca	439546	736474	see also 10340 line	-
10343	FLJ32363	NM_198566.1	528	gccttagattttcgaaactcttc	439616	721628	-	-
10344	FLJ32363	NM_198566.1	529	occtagattttcgaaactcttca	439617	721629	see also 10343 line	-
10345	FLJ32363	NM_198566.1	735	cagcatgaatttaccagatcatatt	439625	721636	see also 10343 line	-
10346	FLJ44216	NM_198567.1	2459	cacctgcagctccaataaaattg	439675	791827	-	-
10347	FLJ41410	NM_198581.1	2114	tacttcagatccttttaccctaa	439792	479439	-	-
10348	RAB15	NM_198686.1	119	tccaccatcggtgttgactttaa	439868	465095	-	-
							channel,	
10349	GABRG2	NM_198904.1	1436	ttcaagggccctaccattgatgat	178750	571958	receptor activity,	-
10350	ALS2CR17	NM_198945.1	2982	gccttagaaggagatgattataa	440108	783975	signal transduction	-
10351	NAPE-	NM_198990.1	939	gaggtgtttatgaataaccagc	440335	803617	-	-
10352	SVT10	NM_198992.1	1338	aagccacagtatggaaagatatt	440368	657533	-	-
	24b2/STA							
10353	C2	NM_198993.1	625	aacagggttcgcgatgtaagatg	440386	648616	-	-
10354	PRES	NM_198999.1	810	tgcctagggtgtgttaggtttgg	440527	643576	-	-
10355	PRES	NM_198999.1	939	aagcgggtacagtggaatcttttc	440531	643582	see also 10354 line	-
10356	PRES	NM_198999.1	940	agcgggtacagtggaatcttttc	440532	643583	see also 10354 line	-
10357	PRES	NM_198999.1	1179	gtgagatgtgttggaacacttcc	440540	643591	see also 10354 line	-
10358	PRES	NM_198999.1	1463	gacacaggttcgaggtgtttgg	440544	643598	see also 10354 line	-
10359	PRES	NM_198999.1	2191	ttgattctgttgagtgaaact	440568	643619	see also 10354 line	-
10360	DBCCR1L	NM_199051.1	438	aggagattagcacaagatataaag	440660	770051	-	-
10361	DBCCR1L	NM_199051.1	1010	ttgagctacattgcttgcaattc	440677	770069	see also 10360 line	-
10362	DBCCR1L	NM_199051.1	1131	aagagaaatcttctcgaataact	440683	770073	see also 10360 line	-
10363	DBCCR1L	NM_199051.1	1257	tgcatttggacaaatggattot	440688	770080	see also 10360 line	-
10364	DBCCR1L	NM_199051.1	2350	cagagacccgtgtaataaactct	440713	770100	see also 10360 line	-
10365	DBCCR1L	NM_199051.1	2352	gagaccgtgttaataaactctcc	440714	770101	see also 10360 line	-
10366	ATBF1	NM_006885.2	7604	ggagcggcgtgagcttacaataga	139	-	see also 4813 line	-
							transcription_regulat	-
10367	GTF2IRD1	NM_005685.2	2501	gtgctggtccctataaactaat	220	-	or	-
10368	HIFA	NM_001530.2	1097	aggccgctcaatttatgaatt	252	-	see also 1050 line	-
10369	ICSBP1	NM_002163.1	454	tggagtcggtgcgtctgaaatc	318	-	see also 1387 line	-
10370	MYEF2	NM_016132.2	644	aggaggacacgtccctgatattg	343	-	see also 6688 line	-

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10371	MYF5	NM_005593.1	536	atggcatgccccgaatgttaacagt	386	-	transcription_regulat or	RNA polymerase II transcription factor, enhancer binding	-
10372	MYOD1	NM_002478.3	573	ctgcacgtcgagcaatccaacc	396	-	transcription_regulat or	MyoD/E47	-
10373	NR6A2	NM_003822.2	1397	ttgatcaacgagagttcgatgt	444	-	see also 2604 line		
10374	RFX1	NM_002918.2	93	atggcaacacagggcgatactga	458	-	transcription_regulat or	translation regulator	-
10375	RFX3	NM_002919.2	1803	aagatacacgtcgtttaatacc	507	-	see also 1964 line		
10376	TFAP4	NM_003223.1	287	aggtgccctctttgcaacatttc	548	-	transcription_regulat or	translation regulator	-
10377	AATF	NM_012138.2	1336	gtgcctttgaacgctcaatttg	573	-	transcription_regulat or, apoptosis	-	-
10378	ADNP	NM_015339.2	2368	atgaccgcctcaactacactot	646	-	see also 6378 line		
10379	AEBP1	NM_001129.2	2431	cggcgagcggcgtagtactacc	686	-	transcription_regulat or	-	-
10380	AF5Q31	NM_014423.1	784	gaggcaagacgtagtcataata	707	-	see also 5667 line		
10381	AHR	NM_001621.2	2990	gtgggtcagatgcagtaacaatcc	861	-	see also 1076 line		
10382	ALX3	NM_006492.1	875	cggctcaccctggcatctactcc	869	-	transcription_regulat	transcription factor	-
10383	ALX4	NM_021926.1	223	gcgcacaagtgcgcacaacttc	874	-	see also 8197 line		
10384	AR	NM_000044.2	2195	gagtcgcgactactacaacttc	890	-	see also 16 line		
10385	ARNT	NM_001668.2	334	atgacatgatgtctaacgataag	918	-	transcription_regulat or,	-	-
10386	ARNT2	NM_014862.1	1220	ctgtcaggtcatgtatcgatttgc	969	-	see also 6062 line		
10387	ARNTL	NM_001178.2	1395	tcggcaacgcgatagatggaagt	1010	-	see also 767 line		
10388	ARNTL2	NM_020183.3	439	gcgcgtaaaactggacaaaacttac	1040	-	transcription_regulat or,	-	-
10389	ASCL1	NM_004316.1	918	gcgctcggcggctcgagatcatcc	1090	-	transcription_regulat or	transcription factor	small cell lung cancer(肺癌)、Alzheimer disease(アルツハイマー病)
10390	ASCL2	NM_005170.1	612	gcgctcagccgctggagatcatcc	1091	-	transcription_regulat or	transcription factor	-
10391	ATF1	NM_005171.2	623	gggaacttcagacattaaccatga	1096	-	transcription_regulat or	translation regulator	sarcoma(肉腫)、clear cell sarcoma(明細胞肉 腫)、osteosarcoma(骨髄性骨肉腫)、clear cell sarcoma of the soft tissue(軟組織明細胞肉 腫)、fibrous histiocytoma(線維性組織球腫)、 malignant melanoma(悪性黒色腫)
10392	ATF3	NM_001674.1	402	gaggtagccctgaagaagatga	1105	-	transcription_regulat or	-	-
10393	ATF6	NM_007348.1	1037	tagggtagagcgcgagattaaag	1128	-	transcription_regulat or,	translation regulator	-
10394	ATF7	NM_006856.1	293	gtgggactcttcaatgaactagc	1157	-	see also 4802 line		

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10395	ATO1	NM_005172.1	551	atgtattccgctcggttcaaac	1173	-	transcription_regulat	translation	-
10396	ATRX	NM_000489.2	7323	caggcggttagcattaagtagaca	1303	-	see also 379 line	-	-
10397	BACH1	NM_001186.1	831	gagtcgctactcgggaattctagt	1323	-	-	translation	-
10398	BAPX1	NM_001189.2	858	ggcgacgacacagagacaatacc	1365	-	see also 771 line	-	-
10399	BARHL1	NM_020064.2	212	ttgggacgactccactctctcc	1366	-	transcription_regulat	-	-
10400	BARX1	NM_021570.2	654	tcgagaagcagaaagtaactttcc	1371	-	transcription_regulat	transcription factor	-
10401	BARX2	NM_003658.3	193	aaggagacactgcgattactttga	1376	-	transcription_regulat	RNA polymerase II	-
10402	BAZ1B	NM_023005.2	3145	cagcattgactaccgattcaacc	1450	-	transcription_regulat	transcription factor	-
10403	BCL6	NM_001706.2	679	gtggacacttgcgggaatttat	1488	-	see also 1132 line	-	-
10404	BHLHB2	NM_003670.1	1011	gagaaagatcggcgcaattaaag	1511	-	see also 2497 line	-	-
10405	BHLHB3	NM_030762.1	522	gcgttcactcgggatttcaaac	1531	-	see also 8938 line	-	-
10406	BNC	NM_001717.2	859	agggctattgcccgacaatatata	1546	-	see also 1144 line	-	-
10407	BRD8	NM_006696.3	605	atggttcgctctctctatagatc	1586	-	see also 4727 line	-	-
10408	BRF1	NM_001519.2	1149	gaggctcacggaatttgagagaca	1644	-	transcription_regulat	-	-
10409	BTAF1	NM_003972.1	2492	ttgataatcgagtaaacacaat	1720	-	transcription_regulat	transcription factor	-
10410	BTG2	NM_006763.2	161	gagcgagcagaggcctaagctct	1823	-	transcription_regulat	transcription factor	-
10411	C10orf1	NM_020527.1	803	ctggccgaccttaattcaattagc	1842	-	-	transcription factor	-
10412	C10orf48	NM_173576.1	1188	cagaaagtgtcccatatagcaga	1878	-	see also 10085 line	-	-
10413	C20orf17	NM_173485.2	2979	ctgcagctcgcctgaacaatca	1912	-	-	-	-
10414	CART1	NM_006982.1	1101	aaggagcacacccgccaattatc	1961	-	see also 4878 line	-	-
10415	CBFA2T1	NM_004349.2	1883	gtggccgtaaaagcagtgaaacc	1993	-	see also 2910 line	-	-
10416	CBFA2T2	NM_005093.2	940	aagggtcgggactctgtttctgc	2005	-	transcription_regulat	-	-
10417	CBFA2T3	NM_005187.4	817	ttgacgacgagaggagtttcattc	2032	-	transcription_regulat	-	-
10418	CBFB	NM_001755.1	74	gagccgagagtgtagattaagt	2034	-	transcription_regulat	-	-
10419	CBL	NM_005188.1	2321	cagattgtagctgtactataga	2097	-	transcription_regulat	-	leukemia(白血病)
10420	CCRN4L	NM_012118.2	743	ctggcctaccagcctgatatt	2113	-	see also 3644 line	-	-
10421	CDX2	NM_001265.2	724	aggacgaaagacaatatatagat	2139	-	transcription_regulat	transcription factor	-
10422	CDX4	NM_005193.1	759	cagccctggggaactacctaaca	2149	-	transcription_regulat	translation	-
10423	CHD4	NM_001273.1	2019	tggcgggacttaccttagatca	2181	-	transcription_regulat	regulator	-
						-	see also 838 line	transcription factor	-

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10424	CHES1	NM_005197.1	265	ctgcctgacatccgattagaaga	2240	-	cell_cycle, transcription_regulat or、	translation regulator	-
10425	CHX10	NM_182894.1	453	cagctcgattctgaagatgtt	2259	-	see also 10280 line	-	-
10426	CITED1	NM_004143.2	539	acgtcgaggcctgcactgatgt	2264	-	transcription_regulat or	transcription factor	melanoma(メラノーマ)
10427	CITED2	NM_006079.2	867	tcgacgaggaagttcttatgtcc	2273	-	transcription_regulat or	transcription factor	-
10428	CLOCK	NM_004898.2	2508	atggtacctagtactatgcttat	2337	-	see also 3398 line	-	-
10429	CNOT7	NM_013354.4	956	acgtagaggaccacacacatoagg	2348	-	transcription_regulat or、	-	-
10430	CNOT8	NM_004779.4	413	tcgtagtccatagattaccaat	2363	-	transcription_regulat or	transcription factor	myelodysplastic syndrome(骨髓異形成症候群)
10431	CREB3L1	NM_052854.1	1017	aggagagccgtcgtgaagaagaag	2416	-	see also 9436 line	-	-
10432	CREBBP	NM_004380.1	2205	gaggtcgcgtttacataaacaag	2467	-	transcription_regulat or、	PEBP2/CBP heterodimer	Rubinstein-Taybi syndrome(ルビンスタイン・ティ ビ症候群)
10433	CREBL2	NM_001310.2	290	aggtggttagggcgaagaaag	2523	-	transcription_regulat or、	-	-
10434	CRX	NM_000554.2	762	atgggtctccgagcctctatttc	2569	-	transcription_regulat or	translation regulator	cone-rod dystrophy(錐体・桿体ジストロフィー)
10435	CSDA	NM_003651.3	567	aagaataacccacgcgaatatct	2577	-	transcription_regulat or	transcription co- repressor	-
10436	CTCF	NM_006565.1	1786	cagtggtattacgcctgttagaca	2613	-	see also 4803 line	-	-
10437	CUTL1	NM_001913.2	368	cagcgctgcacgatattgaaac	2630	-	transcription_regulat or	-	leiomyoma(血管筋腫)
10438	DLX1	NM_178120.2	805	ccggctggaaccctaaactctca	2674	-	transcription_regulat or	transcription factor	-
10439	DLX2	NM_004405.2	18	cagcttagtggtctgatatgcact	2675	-	transcription_regulat or	transcription factor	-
10440	DLX3	NM_005220.2	355	cagcgctcccgagcagcattact	2678	-	see also 3662 line	transcription factor	-
10441	DLX5	NM_005221.3	629	ggcgcccaatggcgtgaactcg	2694	-	transcription_regulat or	transcription factor	-
10442	DMRT1	NM_021951.1	923	gggcctcccgaggaccttatgtgc	2700	-	transcription_regulat or	transcription factor	dementia(痴呆)、gonadal dysgenesis(性器發育異 常症)
10443	DMRT2	NM_006557.3	535	gggcttccgggaaacacagaataa	2703	-	transcription_regulat or	-	-
10444	DMRT3	NM_021240.2	517	acggcaagtcggcgagacaataca	2734	-	see also 8142 line	-	-
10445	DMRTB1	NM_033067.1	980	ctgacgcctcctgtttgatactga	2751	-	transcription_regulat or	-	-
10446	DMTF1	NM_021145.1	2044	cagtcgtagtgatattcagtcga	2814	-	see also 8108 line	-	-
10447	DRIL1	NM_005224.1	1768	tggagatcaacggcatcatgtac	2839	-	transcription_regulat or	translation regulator	-
10448	DSCR1	NM_004414.4	653	atcggaaccccgagtcataaactat	2847	-	transcription_regulat or、	transcription factor	Alzheimer disease(アルツハイマー病)

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10449	DSIP1	NM_004089.2	523	gcgtgagaacaccctgttgaaga	2852	-	transcription_regulat or	-	-
10450	E2F1	NM_005225.1	949	gtggactcttcggagaacttca	2860	-	transcription_regulat or, apoptosis, cell_cycle	E2F-1/DP- 1 complex	chondrosarcoma(軟骨肉腫)
10451	E2F2	NM_004091.2	1276	ctgaggacaacactgcagatatat	2870	-	transcription_regulat or, cell_cycle	E2F-4/DP-1 complex	-
10452	E2F3	NM_001949.2	1398	cagcatctcttcgatgcttacg	2899	-	transcription_regulat or, cell_cycle	translation regulator	-
10453	E2F4	NM_001950.2	772	aggaagcctcacgtccaaatagt	2908	-	-	E2F-4/DP-1 complex	-
10454	E2F5	NM_001951.2	394	ctgtaataactaaagaagtcataag	2918	-	-	-	-
10455	E2F6	NM_001952.3	483	ttgatgatcgctggtttatta	2948	-	transcription_regulat or, cell_cycle	transcription factor	-
10456	E4F1	NM_004424.2	1595	gtggcaagcgcctacaagaactaag	2955	-	transcription_regulat or	sodium:dicarboxylat e/tricarboxylate cotransporter	-
10457	EGR3	NM_004430.2	477	gcgactcggtagtccattacaat	2962	-	-	see also 2963 line	-
10458	EGR4	NM_001965.1	1057	cggcagcggcgagagttctgg	2975	-	transcription_regulat or	transcription factor	-
10459	EHF	NM_012153.2	947	cagcogagctatgagatatact	2996	-	-	see also 5151 line	-
10460	ELF1	NM_172373.2	1741	cagcaggccttactagcaatgt	3048	-	-	see also 10046 line	-
10461	ELF2	NM_006874.1	995	gagaagggtgtagctagagattgt	3083	-	-	see also 4810 line	-
10462	ELF3	NM_004433.3	4231	ccggcgactcgtctacaagtttg	3091	-	transcription_regulat or	-	-
10463	ELF4	NM_001421.1	656	atgtcaaccgcgggaagtcttact	3095	-	transcription_regulat or	-	-
10464	ELF5	NM_001422.2	808	gagcgggttgaccggaaggttagt	3134	-	-	-	-
10465	ELK1	NM_005229.2	573	gtggccctcgtctatacatgc	3144	-	-	see also 994 line	-
10466	ELK3	NM_005230.1	669	aagcacgagcgcgaacgaataca	3149	-	transcription_regulat or	translation regulator	-
10467	ELK4	NM_001973.1	216	atgatctgtggaccttaatga	3156	-	transcription_regulat or	-	-
10468	EN1	NM_001426.2	1838	tgggtgactgcacacggttatto	3186	-	transcription_regulat or	transcription factor	-
10469	EOMES	NM_005442.2	1400	gaggtcggtacggcggttcaatcc	3215	-	transcription_regulat or	transcription factor	-
10470	EP300	NM_001429.1	5911	ccggagatgcccaatgtatataac	3348	-	-	see also 995 line	-
10471	ERF	NM_006494.1	370	gggcccctgcgtattactataac	3382	-	-	see also 4547 line	-
10472	ERG	NM_004449.2	62	aggaccagctgtgtttgagtggt	3391	-	-	see also 2984 line	-
10473	ESR1	NM_000125.1	1233	ttggccaagcccgctcatgatca	3423	-	receptor activity, transcription_regulat or	atherosclerosis(粥状硬化症)、liposarcoma(脂肪 肉腫)、breast cancer(乳癌)、estrogen resistance(エストロゲン耐性)	-
10474	ESR2	NM_001437.1	494	gagcacggctccatatacatacc	3437	-	steroid binding	-	-
						-	see also 1005 line	-	-

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10475	ESRRB	NM_004452.2	501	ctggaactcgcacccactgtttgc	3461	-	transcription_regulat	steroid hormone receptor	-
10476	ESRRG	NM_001438.1	774	aagtacaagcgagtagatgc	3486	-	see also 1006 line		
10477	ESX1L	NM_153448.2	652	gaggtgctaatgttgagaaca	3506	-	transcription_regulat		-
10478	ETS1	NM_005238.1	734	ccgctatactcggattactica	3529	-	see also 3672 line		
10479	ETS2	NM_005239.2	344	atgactccgcgaactgtgaattg	3538	-	transcription_regulat	Ets1/ Ets2 complex	leukemia(白血病), prostate cancer(前立腺癌)
10480	ETV1	NM_004956.2	1109	gagtaccacgaccagctgtatga	3560	-	transcription_regulat		Ewing sarcoma(ユーイング肉腫), Ewing's sarcoma(ユーイング肉腫), Ewing's tumours(ユーイング腫瘍)
10481	ETV3	NM_005240.1	477	tcggtcaagtggtgaagatacaaa	3577	-	transcription_regulat	transcription factor	Ewing's sarcoma(ユーイング肉腫)
10482	ETV4	NM_001986.1	1258	ccgctcgcgcgatactattatg	3595	-	transcription_regulat	transcription factor	Ewing's sarcoma(ユーイング肉腫)
10483	ETV5	NM_004454.1	1542	gagagcgatacgtctacaattt	3611	-	transcription_regulat	transcription factor	
10484	ETV6	NM_001987.2	320	aagaggaacttcgctatogactc	3621	-	transcription_regulat	transcription factor	
10485	ETV7	NM_016135.2	996	ctgcccactattataagcttaa	3648	-	see also 1267 line	specific RNA polymerase II transcription factor	
10486	EVX1	NM_001989.2	567	cggacacagagtcggattctat	3654	-	transcription_regulat	transcription factor	
10487	FHX	NM_018416.2	2365	tggtaatcggctcaattgtcc	3678	-	see also 7459 line	transcription factor	
10488	FKHL18	NM_004118.3	1038	cggagcccgaggaaatgtctct	3692	-	transcription_regulat	transcription factor	
10489	FLI1	NM_002017.2	906	gaggggcaacaacagcagtaag	3710	-	see also 1296 line		
10490	FLJ12287	NM_022367.2	1669	gggtgccccgagcccaactgtagt	3741	-	see also 8351 line		
10491	FLJ12895	NM_023926.3	694	gggcatactcctcgtgataaggtcc	3745	-	transcription_regulat		
10492	FLJ21616	NM_024567.1	627	ctgcgacgagggagtcgatttac	3768	-	see also 8645 line		
10493	FLJ23614	NM_152695.2	643	ggggccacggagcgtgaactatgg	3786	-	transcription_regulat		
10494	FLJ25169	NM_152568.1	135	cagacactcctgcgtatgtcttct	3802	-	transcription_regulat		
10495	FLJ25680	NM_153216.1	936	cagtgatataccccactatata	3815	-	transcription_regulat		
10496	FLJ30878	NM_144657.1	782	agggccagcattacataacttat	3829	-	transcription_regulat		
10497	FLJ33779	NM_182572.2	1417	ctggatggtccaccctcattgacc	3868	-	transcription_regulat		
10498	FLJ35867	NM_152455.2	2062	cggagtcacgactcattagaca	3891	-	transcription_regulat		
10499	FLJ35936	NM_173464.1	891	acgattactgtgcgatgttaaat	3914	-	transcription_regulat		



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10500	FMNL2	NM_052905.1	1439	atgtcgttgggaaatctacaaa	3959	-	transcription_regulat	-	-
10501	FOSL2	NM_005253.2	1511	gggcgtgtgtgtgtgaaacagg	4002	-	see also 3697 line	-	-
10502	FOXA1	NM_004496.2	395	ccgtcccggtcagcaaatgaac	4006	-	transcription_regulat	translation	-
10503	FOXA2	NM_021784.3	316	acggcatgaacacgtacatgagc	4011	-	or	regulator	-
10504	FOXC1	NM_001453.1	1572	cggaatagtagtgcgtcaaatgg	4026	-	see also 8169 line	transcriptional	Axenfeld-Rieger anomaly(-), iridogoniodysgenesis(-)
10505	FOXD1	NM_004472.1	1766	ctgtccagtgtcggagaactttac	4030	-	transcription_regulat	transcription factor	-
10506	FOXD2	NM_004474.1	3357	gaggccttcctctctctatagacc	4033	-	or	transcription factor	-
10507	FOXD3	NM_012183.1	1348	gtgccactctcggacaggtttct	4036	-	transcription_regulat	transcriptional	-
10508	FOXF2	NM_001452.1	1411	caggagcgtctgtcaggatattaa	4043	-	or	activator	-
10509	FOXG1B	NM_005249.3	1458	acgtccgcaccccgatgaatgact	4049	-	transcription_regulat	translation	-
10510	FOXH1	NM_003923.1	1542	agggctgctctgcgatctagacg	4062	-	see also 3690 line	regulator	-
10511	FOXJ1	NM_001454.1	695	cagatccacactcggcagaattca	4065	-	transcription_regulat	transcription factor	-
10512	FOXL1	NM_005250.1	906	cagcctcgtccgcctttcaacg	4069	-	or	transcription factor	-
10513	FOXN1	NM_021953.1	1151	tgggcccagcggcggagaagtgaa	4099	-	transcription_regulat	translation	-
10514	FOXN1	NM_003593.2	402	ccgtacaagcggcctttccatga	4112	-	or	specific RNA	immunodeficiency(免疫不全症)
10515	FOXO1A	NM_002015.2	1712	caggacaataagtcgagttatgg	4149	-	transcription_regulat	polymenase II	-
10516	FOXO3A	NM_001455.1	2648	ctgtcagccagctctatgcaaac	4181	-	see also 1293 line	transcription factor	-
10517	FOXP1	NM_032682.3	1423	atgccttgacgataagaagata	4200	-	see also 1014 line	transcription factor	-
10518	FOXP2	NM_014491.1	1010	gaggcctagaccctcactactaac	4225	-	see also 9272 line	transcription factor	-
10519	FOXP3	NM_014009.2	864	gagaaggcagggcacaatgtct	4247	-	see also 5707 line	transcription_regulat	transcription factor diabetes(糖尿病)
10520	FOXP4	NM_138457.1	2032	tggacgagcgggagatcagaag	4255	-	or	transcription factor	-
10521	FOXQ1	NM_033260.2	588	gtgcacgcagcagccatatacag	4257	-	see also 9622 line	transcription_regulat	-
10522	FUBP1	NM_003902.2	774	atggtttagagtaattctgta	4284	-	or	transcription factor	-
10523	G10	NM_003910.2	632	caggcagaaactctatgaatt	4333	-	see also 2659 line	transcription_regulat	-
10524	GABPB2	NM_002041.2	377	gtggacgcagcaccattacat	4338	-	transcription_regulat	transcription factor	-
10525	GAS41	NM_006530.2	270	aagggtgttactatcgttaaac	4369	-	see also 1317 line	transcription factor	-
10526	GAS7	NM_003644.1	920	caggcccagtcctcaaatgtttga	4405	-	see also 4564 line	transcription_regulat	-
						-	or, cell cycle	-	-

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10527	GATA1	NM_002049.2	848	aagcgctgattgtcagtaaacg	4414	-	see also 1322 line	
10528	GATA2	NM_032638.3	1366	ccggcacctgtgtgcaaatgt	4422	-	see also 9271 line	
10529	GATA5	NM_080473.3	893	gcggcctctggctatgaagaag	4436	-	transcription_regulat	translation regulator
10530	GATA6	NM_005257.3	1662	atgctgtgagcctctacatgaaa	4438	-	see also 3699 line	-
10531	GLI2	NM_005270.2	1253	ccgcacaccgctgctcaagaga	4449	-	transcription_regulat	-
10532	GLI3	NM_000168.2	481	gagcgctgacattacatgctcc	4461	-	see also 138 line	-
10533	GSH-2	NM_133267.1	998	tcgactcggaggattgaatcgc	4523	-	see also 9563 line	-
10534	GSH1	NM_145657.1	535	gagcgagctgcgtcttcaatat	4525	-	transcription_regulat	-
10535	GTF2A2	NM_004492.1	315	cagggtctctctaaatagctaca	4531	-	see also 3043 line	-
10536	GTF2H3	NM_001516.3	535	gtcgttcgagctatataaaccttc	4559	-	transcription_regulat	translation factor, nucleic acid binding
10537	GTF2H4	NM_001517.3	264	gggtattggaccgcatgtatgg	4569	-	-	transcription factor
10538	GTF2I	NM_001518.2	978	atgctgacaggtcaatactatct	4585	-	see also 1043 line	-
10539	HAND1	NM_004821.1	568	gagacgcactgagagcattaaca	4591	-	transcription_regulat	transcription factor
10540	HCF1	NM_005334.1	5339	gggacccgtccctgactataacc	4624	-	see also 3716 line	-
10541	HCLS1	NM_005335.3	668	aagagcgtctgctggcttcaatga	4638	-	transcription_regulat	transcription factor
10542	HDAC1	NM_004964.2	870	tcgtttagtctgcttcaatctaa	4672	-	transcription_regulat	transcription factor
10543	HDAC2	NM_001527.1	1110	tggctacacaaatccgtaagtgtg	4714	-	or, apoptosis	transcription factor
10544	HESX1	NM_003865.1	432	aagactgtgtccattaatgaaa	4725	-	see also 1047 line	transcription factor
10545	HEY1	NM_012258.2	286	ccgacgagacccggatcaataaca	4743	-	transcription_regulat	transcription factor
10546	HEY2	NM_012259.1	225	aggcgtcgggatoaggataataa	4758	-	see also 5240 line	transcription factor
10547	HEYL	NM_014571.2	348	ccgagccctggcagctgacttcc	4768	-	transcription_regulat	-
10548	HHEX	NM_002729.2	621	caggagaaccctcaaaagcaataa	4776	-	transcription_regulat	transcription factor
10549	HIF3A	NM_022462.2	900	ctgttcgctacagagtagatcc	4785	-	transcription_regulat	-
10550	HIRA	NM_003325.3	2869	aggacggttagccataatccagg	4843	-	see also 2255 line	-
10551	HIVER3	NM_024503.1	2656	cagccggcaatcgaaattaccctt	4854	-	see also 3620 line	-
10552	HKR3	NM_005341.1	874	atgggagtgccgattaccatgtct	4915	-	transcription_regulat	translation regulator
10553	HLX1	NM_021958.2	1106	cagttcttcgcatctctagatcc	4929	-	transcription_regulat	transcriptional activator
10554	HLXB9	NM_005515.2	844	gggcatgatcctgcctaagatgc	4940	-	transcription_regulat	RNA polymerase II
10555	HMG20B	NM_006339.1	819	cagcatcccttagcttcaatc	4971	-	transcription_regulat	sacral agenesis syndrome (仙骨發育不全症候群)

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10556	HMGB2	NM_002129.2	353	aaggagaagtcgaagttgaaga	4976	-	transcription_regulat or	transcription factor	-
10557	HNF4A	NM_000457.3	610	gcgacattcgggcgaagaagatt	4985	-	transcription_regulat or	-	diabetes(糖尿病)、diabetes mellitus(糖尿病)
10558	HOXA1	NM_005522.3	182	gcgcggctcagcgcacacagttgc	4997	-	see also 3856 line transcription_regulat or	-	-
10559	HOXA10	NM_018951.2	1202	gagctcacagccaactttaatt	5022	-	transcription_regulat or	-	-
10560	HOXA3	NM_030661.3	1013	cggagccggtggctctctgaact	5058	-	transcription_regulat or	-	-
10561	HOXA4	NM_002141.2	658	gcgcggttaaccaccagttataac	5063	-	transcription_regulat or	transcription factor	-
10562	HOXA5	NM_019102.2	599	atgcgcaagctgcacataagtca	5072	-	see also 7708 line transcription_regulat or	-	-
10563	HOXB1	NM_002144.2	116	aggcgggtgacagctatgcaagc	5094	-	transcription_regulat or	PBX1a/HOXB1 heterodimer	-
10564	HOXB13	NM_006361.2	354	cagctcccgctgccttatggttac	5098	-	transcription_regulat or	transcription factor	-
10565	HOXB2	NM_002145.2	232	aaggagtcgacatttaattctctcc	5108	-	transcription_regulat or	translation regulator	-
10566	HOXB3	NM_002146.3	1501	ccggcctcgccgtgtagagatgg	5116	-	transcription_regulat or	transcription factor	-
10567	HOXB5	NM_002147.2	200	cggctctacggctcaattaca	5127	-	see also 1371 line transcription_regulat or	-	-
10568	HOXB6	NM_018952.3	420	atgcggaccgcctgagacattac	5131	-	transcription_regulat or	-	-
10569	HOXB7	NM_004502.2	338	tcggagccgagttccttcaacatg	5133	-	transcription_regulat or	transcription factor	-
10570	HOXC10	NM_017409.2	91	atgacatgccctcgcaatgtaac	5153	-	transcription_regulat or	RNA polymerase II	-
10571	HOXC11	NM_014212.2	800	aagcgtgccccttattcgaatt	5168	-	transcription_regulat or	transcription factor	-
10572	HOXC9	NM_006897.1	504	caggtacccggactacatgtaag	5201	-	transcription_regulat or	RNA polymerase II	-
10573	HOXD1	NM_024501.1	912	gcgcgatccgcacgaatttcagc	5205	-	see also 4829 line transcription_regulat or	transcription factor	-
10574	HOXD13	NM_000523.2	867	aggggatgtggctctaaatcagc	5233	-	transcription_regulat or	transcription factor	brachydactyly(短指症)、synpolydactyly(合多指 症)、Synpolydactyly(合多指症)
10575	HOXD3	NM_006898.4	225	atgcagaaggctgcttactatga	5235	-	transcription_regulat or	transcription factor	-
10576	HOXD8	NM_019558.2	1028	acggatacagataacttactacagaga	5243	-	transcription_regulat or	transcription factor	-
10577	HOZFP	NM_152995.3	1989	ctgttaggaccctactcttctgaaa	5308	-	transcription_regulat or	-	-
10578	HR	NM_005144.2	3794	ggggcatgagcgaatacacatgg	5328	-	transcription_regulat or	-	alopecia universalis(全身性脱毛症)、atrachia(無 毛症)

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								transcription_regulat or	heat shock transcription factor 1B	
10579	HSF1	NM_005526.1	1641	tgggagaggctcctactctcc	5334	-	-	-	-	
10580	HSF2	NM_004506.2	203	ttggatgagcaacgatttgcaa	5338	-	see also 3063 line	-	-	
10581	HSFY	NM_033108.1	214	acgggtcaatgatigaagaacatg	5366	-	transcription_regulat or	-	-	
10582	HSRSAFE V	NM_017521.1	791	ggcgcggtcacggcgagtccaagc	5385	-	transcription_regulat or	-	maxillary tumor(上顎癌), paraspinial neurogenic tumor(傍脊椎神経性腫瘍)、Ewing sarcoma(ユ- イング肉腫)、Ewing's sarcoma(ユ-イング肉腫)	
10583	HITLF	NM_002158.2	1053	gaggagttaacggcaatgcatttc	5408	-	transcription_regulat or	-	-	
10584	IILF1	NM_004514.2	600	caggttcccggagacaacaatca	5424	-	transcription_regulat or	-	-	
10585	JPF1	NM_000209.1	635	tggctgtcatgtttaacctgaacc	5448	-	-	-	diabetes mellitus(糖尿病病)、pancreatic agenesis(膵臓形成不全)、diabetes(糖尿病病)、 maturity-onset diabetes of the young(若年者の	
10586	JRF1	NM_002198.1	263	ggcgctcatctggattaataaag	5454	-	see also 1402 line	-	-	
10587	JRF2	NM_002199.2	289	tggatgcattcgcgctagacatgg	5460	-	transcription_regulat or	RNA polymerase II transcription factor	arthritis(関節炎)	
10588	JRF3	NM_001571.1	429	gtggaggcagctacttgtatgcc	5479	-	transcription_regulat or	translation regulator	-	
10589	JRF4	NM_002460.1	1378	ctgaggggctacgatttaccaga	5494	-	transcription_regulat or	translation regulator	chronic myeloid leukemia(慢性骨髄性白血病)、 non-hodgkin lymphoma(非ホジキンリンパ腫)、 leukemia(白血病)、multiple myeloma(多発性骨髄	
10590	JRF5	NM_002200.3	412	cggggacttcgcgctcatctacg	5502	-	transcription_regulat or	-	-	
10591	JRF6	NM_006147.2	1450	cagtagtggtcctggatgatctac	5524	-	transcription_regulat or	transcription factor	popliteal pterygium syndrome(膝窩翼状片症候 群)、Van der Woude syndrome(ファン・デ・ワウデ	
10592	JRF7	NM_001572.2	1560	gtggctccccacgcgtataccatc	5532	-	transcription_regulat or	-	-	
10593	JRX1	NM_024337.1	1605	gcacagccagcgctgttgaagg	5537	-	-	-	-	
10594	JRX3	NM_024336.1	1173	gagatcgattggagaacttaga	5540	-	-	-	-	
10595	JRX5	NM_005853.2	1586	aagactctccctatgaattgaag	5558	-	see also 4069 line	-	-	
10596	ISGF3G	NM_006084.3	547	tggggggagcagctccattcagaca	5561	-	transcription_regulat or,	translation regulator	-	
10597	ISL1	NM_002202.1	1189	gaggaccgggctctaattccact	5587	-	see also 1403 line	-	-	
10598	ISL2	NM_145805.1	110	tgggtgtatgggtgatatcc	5591	-	see also 3801 line	-	-	
10599	JUN	NM_002228.2	1032	cggctcgagagcgagaccttatgg	5600	-	see also 1424 line	-	-	
10600	KIAA0669	NM_014779.1	2779	tcggggcaagtcggacgatalactaga	5637	-	see also 5951 line	-	-	
10601	KIAA0863	NM_014913.1	2941	gtggaggcttacacgggaaatatg	5705	-	-	-	-	
10602	KIAA1041	NM_014947.1	1603	cagcatcacagctaacacatca	5772	-	see also 6138 line	-	-	
10603	KIAA1443	NM_020834.1	1564	tgggttgactctcgattacctca	5801	-	-	-	-	
10604	KIAA1474	NM_020856.1	1963	cogtogtatattcatgtcaaac	5831	-	see also 7998 line	-	-	
10605	KIAA1618	NM_020954.1	1614	ctggcatcagctactgatgacatag	5874	-	-	-	-	

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10606	KLF12	NM_007249.3	394	ccggaggactcggtatctctgtaga	5918	-	see also 5050 line
10607	KLF3	NM_016531.2	901	gtggaatcccccggatactcaag	5964	-	see also 6907 line
10608	KLF4	NM_004235.3	1115	gcgcacgtgcccccaagatcaagc	5975	-	transcription_regulat or
10609	L3MBTL	NM_015478.4	1971	acgacctccgaagtatcgaaga	6014	-	transcription_regulat or
10610	LASS2	NM_013384.3	503	atggccgtcatgtggataaacc	6023	-	see also 5416 line
10611	LASS3	NM_179842.2	777	taggagtcggcgggaatcaagaga	6063	-	transcription_regulat or
10612	LASS4	NM_024552.1	1292	aaggacattcgtagtgtgtaga	6095	-	transcription_regulat or
10613	LASS5	NM_147190.1	957	gagataatcgggcccattatgcttc	6125	-	transcription_regulat or
10614	LBX1	NM_006562.3	564	gcgctttctataccagaagtacc	6134	-	transcription_regulat or
10615	LHX1	NM_005568.2	1227	gagagcggagagcaaaagtgttc	6138	-	transcription_regulat or
10616	LHX5	NM_022363.2	1259	cagaaccgacgggtccaagaacg	6177	-	transcription_regulat or
10617	LHX6	NM_014368.2	80	gcgaccaccgcgtctgttgaagg	6179	-	transcription_regulat or
10618	LHX9	NM_020204.2	666	aagatctcgacacaggtactatct	6184	-	transcription_regulat or
10619	LMO4	NM_006769.2	1083	gagggcgcagggaagtgtgtatc	6206	-	see also 4775 line
10620	LMX1A	NM_177398.1	517	aggccatcgctcccaatgagttt	6216	-	transcription_regulat or
10621	LMX1B	NM_002316.1	381	acgcgaaggcgacgaattcgtgc	6226	-	transcription_regulat or
10622	LOC51270	NM_016521.2	493	gcgagctggtgcgaagttcaga	6229	-	transcription_regulat or, cell cycle
10623	LZTS1	NM_021020.1	288	gggcaagagcgaagactcttct	6237	-	see also 8067 line
10624	MADH3	NM_005902.1	390	gtgtgagttcgccctcaatatga	6252	-	transcription_regulat or, Smad3/Sp-1 heterodimer
10625	MADH4	NM_005359.3	1711	atgacctctgctgcttatgcata	6303	-	see also 3736 line
10626	MAFG	NM_002359.1	641	cagcgtcatcaaatagtagaaagt	6312	-	see also 1524 line
10627	MAX	NM_197957.1	208	aagagcaaccgagagtttcaatct	6313	-	transcription factor
10628	MBD1	NM_002384.1	223	tggacgtcagacacctattacc	6322	-	transcription_regulat or
10629	MDS1	NM_004991.1	546	ttgaacttcgagagtcgaatatg	6351	-	transcription_regulat or
10630	MEF2A	NM_005587.1	648	cagaaccaactcggatatgttg	6362	-	transcription_regulat or
10631	MEF2C	NM_002397.2	428	gaggattatgagtaacgtaaca	6391	-	see also 1542 line
10632	MEIS1	NM_002398.1	427	tagccgtgttcgccaaacagatt	6416	-	see also 1545 line

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10633	MEIS2	NM_002399.2	1408	atgattgaccagtcgaatcgagc	6447	-	see also 1556 line	-	
10634	MEOX1	NM_004527.2	410	aggaggcccgaggcgactacg	6463	-	transcription_regulat	-	
10635	MEOX2	NM_005924.2	1019	cagcaaacagaggactctatagc	6472	-	transcription_regulat	transcription factor	atherosclerosis(粥状硬化症)
10636	MLL	NM_005933.1	10453	cagacggtagacgctcctaatag	6736	-	transcription_regulat	zinc binding	leukemia(白血病)
10637	MLL2	NM_003482.1	14807	aggccacgcgcattcttgagc	6864	-	transcription_regulat	-	leukemia(白血病)
10638	MLL4	NM_014727.1	8124	gcgctgcctgcgtctcttaact	6955	-	transcription_regulat	zinc binding	-
10639	MLLT10	NM_004641.1	732	tgggtccgataatgtccaatact	6974	-	see also 3155 line	-	
10640	MLLT2	NM_005935.1	2209	aggcaaaccttgggaaccacaaca	7049	-	transcription_regulat	transcription factor	leukemia(白血病)
10641	MLLT7	NM_005938.1	555	gagtgatggtccgtactgtacc	7078	-	see also 4146 line	-	
10642	MNT	NM_020310.1	1061	gcggctggcacgtgagaagattg	7088	-	transcription_regulat	transcription factor	-
10643	MSC	NM_005098.2	814	atgtggaaccacgccttaatacg	7093	-	transcription_regulat	transcription factor	-
10644	MSX1	NM_002448.1	711	ctgcacccctccgcaaacacaaga	7097	-	transcription_regulat	transcription factor	hypodontia with orofacial cleft(顔面裂)、 hypodontia(小顎症)、Witkop syndrome(ワイトコッ プ症候群)
10645	MSX2	NM_002449.3	749	ctgcagcagcgtccatataatg	7105	-	transcription_regulat	transcription factor	craniosynostosis(頭蓋骨縫合早期癒合症)
10646	MTA1	NM_004689.2	1329	caggaccaaacccgagtaaacatg	7122	-	see also 3218 line	-	
10647	MTA2	NM_004739.2	1821	acggccttatgctcctctcaatg	7156	-	see also 3269 line	-	
10648	MYBL2	NM_002466.2	975	caggagcccatcggtacagatct	7221	-	transcription_regulat	transcription factor	neuroblastoma(神経芽細胞腫)
10649	MYC	NM_002467.2	1673	tgaacagctacaggactcttgt	7240	-	or, apoptosis, cell cycle	-	
10650	MYCL2	NM_005377.1	1072	aaggccacggaataacttaacatga	7251	-	see also 1586 line	-	
10651	MYCN	NM_005378.3	1363	gtgcggaggttggttaaaagaatga	7263	-	-	transcription factor	-
10652	MYF6	NM_002469.1	455	gcggagcgccatcgactatattg	7265	-	transcription_regulat	transcription factor	rhabdomyosarcoma(肉状横紋筋肉腫)、lung cancer(肺癌)、neuroblastoma(神経芽細胞腫)、 retinoblastoma(網膜芽腫)、osteosarcoma(骨髄 性骨肉腫)、astrocytic tumors(星状腫瘍)
10653	MYNN	NM_018657.2	943	aagaacactctatgtcttaataata	7294	-	transcription_regulat	Myf6/E47	-
10654	MYOG	NM_002479.2	86	caggaaacccgcttcttatgagg	7324	-	see also 7538 line	transcription_regulat	Myf4/E47
10655	MYST2	NM_007067.3	642	cogtgccttcataaagctaca	7334	-	transcription_regulat	-	-
10656	MYT1	NM_004535.1	2015	cagctcaggtccctccataggg	7366	-	see also 3089 line	-	-
10657	NFAT5	NM_006599.2	2353	tggactgcgtaggagattgaaa	7432	-	see also 4634 line	-	-

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10658	NFATC1	NM_006162.3	2049	ctgtccggaatctgaaactca	7526	-	transcription_regulat	-	-
10659	NFATC2	NM_012340.2	1809	aagcgcgagacggacattggaaga	7559	-	transcription_regulat	-	-
10660	NFATC3	NM_004555.2	2923	cagccttcgtctcagttacaacc	7644	-	transcription_regulat	-	-
10661	NFE2	NM_006163.1	698	cagaatccgactcaggattatcc	7687	-	see also 4264 line	-	-
10662	NFE2L1	NM_003204.1	725	gggccagttctgcctatactca	7703	-	see also 2167 line	-	-
10663	NFE2L2	NM_006164.2	624	caggtagccctgttgatttaga	7741	-	see also 4266 line	-	-
10664	NFE2L3	NM_004289.4	78	ccgcgtagacctagatctttacc	7769	-	transcription_regulat	-	-
10665	NFIA	NM_005595.1	683	ctgttaaggaactagatttat	7848	-	see also 3883 line	-	-
10666	NFIB	NM_005596.1	966	atgaactcgggggtaatttca	7882	-	see also 3886 line	-	-
10667	NFIC	NM_005597.1	854	gtgggagcaagcggcacaaatcg	7891	-	transcription_regulat	Nuclear factor 1 C-type-7	-
10668	NFIL3	NM_005384.1	868	aagcaagagccgatggaattaga	7916	-	transcription_regulat	-	-
10669	NFKB1	NM_003998.2	1101	gtgttcggtctcatgtttacagc	7954	-	see also 2724 line	-	-
10670	NFKB2	NM_002502.2	307	gagaggcttcgatttcgatgatg	8010	-	transcription_regulat	transcription factor	rheumatoid arthritis(関節リウマチ)、 atherosclerosis(粥状硬化症)
10671	NFX1	NM_002504.3	2135	cggttgtgagcagcacaataatg	8070	-	see also 1613 line	-	-
10672	NFYA	NM_002505.3	668	agggcagaccatcgtctatcaac	8110	-	transcription_regulat	-	-
10673	NFYB	NM_006166.2	665	atggtttacacaaacataatca	8122	-	see also 4269 line	-	-
10674	NFYC	NM_014223.2	576	gaggtgcgcagctctgtaactcc	8139	-	transcription_regulat	NF-YA/NF-YB/NF-YC	-
10675	NKX2-2	NM_002509.2	683	acgagtcaccgggacaatgacaag	8148	-	transcription_regulat	RNA polymerase II transcription factor	-
10676	NKX2-3	NM_145285.1	370	aagcagagggcgagaaattgtcc	8153	-	transcription_regulat	-	-
10677	NKX2-8	NM_014360.2	223	gtgcgagccctctagatttaacc	8160	-	transcription_regulat	-	-
10678	NKX3-1	NM_006167.2	336	aaggcacttgggggtcttctctgt	8163	-	transcription_regulat	transcription factor	-
10679	NKX6-1	NM_006168.1	803	gggctggttggccctattcgttg	8173	-	transcription_regulat	transcription factor	-
10680	NME2	NM_002512.1	482	aagaactgttgactacaagtct	8177	-	kinase_related, transcription_regulat or, cell cycle	translation regulator	neuroblastoma(神経芽細胞腫)
10681	NPAS1	NM_002517.2	699	cagcagcgtcttcgactacattc	8182	-	transcription_regulat	transcription factor	-
10682	NPAS2	NM_002518.2	2204	gcgtcccccgaagtctgaatct	8208	-	see also 1618 line	-	-

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10683	NR0B1	NM_000475.2	646	gtgccaccagcagcaccaatcaagc	8219	-	receptor_activity、 transcription_regulat or	steroid hormone receptor	Addison disease(アジソン病)、adrenal hyperplasia(副腎皮質過形成)、dosage-sensitive sex reversal(DSS)、DSS-AHC critical region on the X chromosome gene(DAX1)
10684	NR0B2	NM_021969.1	460	ctgcgggtcagtggtctcaatgc	8230	-	transcription_regulat or、	transcription co- repressor	obesity(肥満)
10685	NR1D1	NM_021724.1	1640	ctgcccccaatgacacaacacacc	8234	-	transcription_regulat or、	transcription co- repressor	-
10686	NR1H2	NM_007121.1	1215	cagagtgatcacaccttctgaag	8245	-	transcription_regulat or、	steroid hormone receptor	atherosclerosis(粥状硬化症)
10687	NR1H4	NM_005123.1	481	tggaaaccatactcgcgaatacagc	8254	-	receptor_activity、 transcription_regulat or	transcription regulator	-
10688	NR1I2	NM_003889.2	2570	ctgacatgtcaacctacatgttc	8287	-	transcription_regulat or、	-	-
10689	NR1I3	NM_005122.2	815	cgggcctcttcgctacacaattg	8301	-	receptor_activity、 transcription_regulat or、	transcription regulator	-
10690	NR2C1	NM_003297.1	747	aggtcaacaggaactgttagatc	8330	-	see also 2229 line	-	-
10691	NR2C2	NM_003298.2	488	cagcgccaagcaacctatattca	8375	-	transcription_regulat or、	transcription co- activator	-
10692	NR2E1	NM_003269.2	1515	gaggtgtgtggtcgtgattagaca	8439	-	see also 2215 line	-	-
10693	NR2E3	NM_014249.2	953	gagcgctggagtgaaactctttct	8456	-	transcription_regulat or、	-	-
10694	NR2F1	NM_005654.3	422	aggagcgtccgcaggaacttaac	8463	-	receptor_activity、	-	-
10695	NR2F2	NM_021005.2	1803	tggccgtatataggcaattcaata	8479	-	receptor_activity、 transcription_regulat or、	translation regulator	-
10696	NR3C1	NM_000176.1	2043	ctgcattgtacgaccaatgtaaac	8524	-	see also 8063 line	-	-
10697	NR3C2	NM_000901.1	1932	tgggtatccggtcttagaataca	8587	-	see also 144 line	transcription_regulat or、	pseudohypoadosteronism(偽性低アルドステロン 症)
10698	NR4A1	NM_002135.3	798	tcgccccagccagacttacgaagg	8614	-	receptor_activity、 transcription_regulat or、	Smad3/Sp-1 heterodimer	-
10699	NR4A2	NM_006186.2	883	ctggcaccccggtgtctagttgc	8634	-	see also 4276 line	-	atherosclerosis(粥状硬化症)
10700	NR5A1	NM_004959.3	451	gaggggtggccgggaacaagtgtg	8693	-	see also 3449 line	-	-
10701	NR6A1	NM_001489.2	1500	gtgcttaccctgagattcgatata	8721	-	see also 1026 line	-	-
10702	NT5C	NM_014595.1	347	cggacacgacgaggtcttcattctgc	8724	-	-	-	-
10703	NY-BR-1	NM_052997.1	308	tagattctggtcgcatataaat	8729	-	transcription_regulat or	-	-



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10704	ODAG	NM_021167.2	752	ttgatcccccctctctataata	8751	-	transcription_regulat	-	-
10705	ONEGUT2	NM_004852.1	1160	ccgtggagtaactcaaatctgg	8774	-	see also 3372 line	-	-
10706	OTX1	NM_014562.2	249	atgatgtcttacctcaacaacc	8783	-	see also 5754 line	-	-
10707	P1P373C6	NM_019110.3	1688	gagcctcccgctgtcttataatg	8812	-	transcription_regulat	molecular_function	unknown
10708	p66alpha	NM_017660.2	531	aagttcggcgagagtaataata	8816	-	transcription_regulat	-	-
10709	P66beta	NM_020699.1	1254	ctcgggttgaaaccttctgtatg	8839	-	see also 7924 line	-	-
10710	PAX4	NM_006193.1	314	acggatccttaaggatctataatg	8894	-	transcription_regulat	transcription_factor	-
10711	PAX7	NM_002584.1	614	cggcacggtaccgagaaatgatgc	8939	-	transcription_regulat	-	rhabdomyosarcoma(胞巣状横紋筋肉腫)、
10712	PBX1	NM_002585.1	1286	tcgcagccagtcagatgtacagt	8969	-	or, apoptosis	-	alveolar rhabdomyosarcoma(胞巣状横紋筋肉腫)
10713	PBX2	NM_002586.3	1414	aggggctatgggataaacctcg	8974	-	see also 1663 line	-	-
10714	PBX3	NM_006195.2	945	caggtcacaggtatcccaattgg	8991	-	see also 1664 line	-	-
10715	PBX4	NM_025245.1	392	ctgtccagatccgacagattta	9003	-	transcription_regulat	-	-
10716	PEG3	NM_006210.1	4290	atggtacgggtcctctctact	9108	-	or	-	-
10717	PGBD1	NM_032507.2	2170	tgggttaggtggaaatctatgta	9149	-	receptor_activity、	-	-
10718	PGR	NM_000926.2	1591	ctgaagtttcggccataacctatc	9172	-	transcription_regulat	-	-
10719	PHF2	NM_005392.2	2194	tggactcggcagctacagaagt	9255	-	see also 603 line	-	-
10720	PHTF1	NM_006608.1	81	gagcctacgacagcagatattg	9273	-	transcription_regulat	-	-
10721	PILB	NM_012228.2	337	gcgacagtcacacttctcagttct	9344	-	or	transcription_factor	-
10722	PITX2	NM_000325.4	882	gcgcccggaggaccgctctaagaag	9349	-	-	-	iridogoniodysgenesis(-)、iris hypoplasia with
10723	PKNOX1	NM_004571.3	952	atgatgttctatctaagaacaag	9387	-	-	-	glaucoma(緑内障に伴う虹彩形成不全)、Rieger
10724	PKNOX2	NM_022062.1	198	ctgcaagcagcagctgtatacagg	9398	-	see also 3110 line	-	syndrome(Rieger症候群)、Peters anomaly(ピー
10725	PLAG1	NM_002655.1	1003	aagtcgtctgtggggtaaaaga	9422	-	see also 8258 line	-	タース奇形)
10726	PLAGL2	NM_002657.2	597	gcagtaagaattacaatacagaag	9456	-	see also 1736 line	-	-
10727	PLU-1	NM_006618.2	2868	ctgtttaccgaactaatcagttgt	9501	-	see also 1738 line	-	-
10728	POLR21	NM_006233.3	145	acggtgtccgggaactgtgattac	9602	-	transcription_regulat	zinc binding	-
10729	POLR3K	NM_016310.2	120	gtgccctcagtgacacaacatca	9606	-	or	transcription_factor	-
10730	POU1F1	NM_000306.1	563	aggatacacccagacacaaatgttg	9616	-	transcription_regulat	Proto-oncogene	pituitary hormone deficiency(脳下垂体ホルモン
10731	POU2F1	NM_002697.1	987	gggtcgctatggggaaactata	9639	-	or	C-JUN	欠乏症)、pituitary dwarfism(下垂体性小人症)
						-	see also 1755 line	-	-

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10732	POU2F3	NM_014352.1	221	atgtcgggaacacaaatgtctgg	9672	-	transcription_regulat	-	-
10733	POU3F4	NM_000307.1	385	cggcacggaacccgtctatcag	9684	-	see also 284 line	-	-
10734	POU4F3	NM_002700.1	858	gcgttactcggagcctatttcg	9711	-	see also 1759 line	-	-
10735	POU5F1	NM_002701.1	127	ggggcacacgtaggttcttgaat	9713	-	transcription_regulat	octamer factor-3	-
10736	PPARA	NM_005036.2	499	gagcattgaacatcgaatgtaga	9728	-	receptor activity, transcription_regulat	PPARalpha/RXRalpha	-
10737	PPARD	NM_006238.2	1186	caggttacactcttoaagtattg	9750	-	transcription_regulat	-	colorectal cancer(大腸癌)、colorectal cancers(結腸直腸癌)
10738	PRDM1	NM_001198.2	1344	ccgggactctctacgttacttga	9826	-	see also 174 line	-	-
10739	PRDM16	NM_022114.1	3599	acgaaggcgggtctgttagcttgg	9878	-	see also 8274 line	-	-
10740	PRDM2	NM_012231.2	5752	aagaacagaccgggttcaatataa	9991	-	transcription_regulat	-	melanoma(メラノーマ)
10741	PRRX1	NM_006902.2	1323	aggaataggacacaccttcaatag	9999	-	see also 4838 line	-	-
10742	RARA	NM_000964.1	241	cagctccagttagtgatagatag	10011	-	transcription_regulat	Smad3/Sp-1 heterodimer	leukemia(白血病)
10743	RARB	NM_000965.2	1310	acggccttacccttaataagaact	10038	-	receptor activity, transcription_regulat	-	breast cancer(乳癌)、lung cancer(肺癌)、Parkinson disease(パーキンソン病)、schizophrenia(精神分裂病)
10744	RARG	NM_000966.3	1644	agggccgatgcctccttaattcc	10060	-	-	-	-
10745	RAX	NM_013435.1	297	aggccatcctgggggtttacaag	10062	-	transcription_regulat	RNA polymerase II transcription factor	-
10746	RB1	NM_000321.1	2108	tagcctatctcgggctaataca	10121	-	see also 268 line	-	-
10747	RBBP1	NM_002892.2	1311	ctgccgttcggcaaatattcagt	10190	-	transcription_regulat	-	-
10748	RBBP2	NM_005056.1	3322	ctgggaggacgtttctttaagaag	10331	-	transcription_regulat	transcription factor	-
10749	REL	NM_002908.1	1906	gagtcgggaccatcaaacagtag	10420	-	see also 1940 line	-	-
10750	RELA	NM_021975.1	1482	gagtaacctgaggctataactcg	10443	-	see also 8236 line	-	-
10751	RELB	NM_006509.2	994	gagccgctctatgacaaagaatc	10446	-	see also 4552 line	-	-
10752	RERE	NM_012102.2	1191	atggtactaccgtcaatctgagg	10454	-	transcription_regulat	-	-
10753	RFX5	NM_000449.2	493	atgatcctctcggagtagctgt	10497	-	see also 353 line	-	-
10754	RLF	NM_012421.1	3986	aaggcttaattcgcattacaga	10639	-	transcription_regulat	-	-
10755	RNF110	NM_007144.2	636	cagcctctccatcgaattctacg	10701	-	transcription_regulat	transcription factor	-
10756	RORA	NM_002943.2	1369	gtgtactttgatgggaagtatgc	10746	-	see also 1984 line	-	-
10757	RUNX1	NM_001754.2	1056	aagacatcggcgagaactagatg	10842	-	transcription_regulat	transcription factor	leukemia(白血病)、familial platelet disorder with associated myeloid malignancy(FPDM症)

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10758	RXRB	NM_021976.3	1496	ctgctgaggccaatcattctgt	10884	-	receptor activity, transcription_regulat	retinoid X receptor beta-1	Parkinson disease(パーキンソン病)、 schizophrenia(精神分裂病)
10759	RXRG	NM_006917.2	633	aagcaactacggggatatacagttg	10899	-	transcription_regulat	Retinoic acid receptor RXR-	Parkinson disease(パーキンソン病)、 schizophrenia(精神分裂病)
10760	SATB1	NM_002971.2	1376	gtgggtacgogagtaactgaac	10948	-	transcription_regulat	transcription factor	-
10761	SATB2	NM_015265.1	834	cagctccaatgcattaccaaa	10985	-	see also 6294 line	-	-
10762	SBLF	NM_006873.2	1403	aagcgagatgaatcctattaga	11043	-	-	-	-
10763	SCAND2	NM_022050.2	450	cagactcctcagtaacaagatct	11071	-	transcription_regulat	-	-
10764	SCMH1	NM_012236.1	1190	cggacaccccaagaccctaatttc	11088	-	transcription_regulat	-	-
10765	SCML1	NM_006746.2	845	ctgatgtgcaacgtatggtct	11108	-	transcription_regulat	-	-
10766	SCML2	NM_006089.1	1098	gagaccgtgcatgttatataa	11141	-	-	-	-
10767	SCRT1	NM_031309.2	450	cggcggaagcctcttctcacc	11161	-	transcription_regulat	-	small cell lung cancer(肺癌)、non-small-cell lung cancer(非小細胞肺癌)
10768	SDCCAG3	NM_005786.3	4342	cagtaaaactgcaccttagtaag	11196	-	transcription_regulat	-	-
10769	SIM1	NM_005068.2	1176	ctgtatcgtcagcgtaactatg	11218	-	see also 3536 line	-	-
10770	SIX1	NM_005982.1	533	gtgctgaaggcgcatcactgtg	11276	-	see also 4179 line	-	-
10771	SIX2	NM_016932.3	394	gagcaccttcacaagaatgaag	11282	-	transcription_regulat	transcription factor	-
10772	SIX3	NM_005413.1	1359	gcgactcgggaatgtgatgtatga	11290	-	see also 3779 line	-	-
10773	SIX6	NM_007374.1	296	ccgagagctctatcatctctgg	11343	-	transcription_regulat	transcription factor	-
10774	SLC26A3	NM_000111.1	440	gtggccgtactacaagggttagc	11360	-	transcription_regulat	transcription factor	congenital chloride diarrhea(先天性イオン性下痢 症)
10775	SLC2A4R	NM_020062.3	585	ccgaggcagcccaacttctgttt	11443	-	transcription_regulat	-	-
10776	SLC30A9	NM_006345.2	1272	aagctgtatcctctagtacaagt	11479	-	see also 4439 line	-	-
10777	SLC38A2	NM_018976.3	1573	tggcgtcatagtctcattacagt	11550	-	see also 7623 line	-	-
10778	SLC38A6	NM_153811.1	324	atggctaatacccggtctcttgg	11560	-	-	-	-
10779	SLC4A10	NM_022058.2	2394	tggttgttacgccttaggtcc	11652	-	see also 8254 line	-	-
10780	SMARCA4	NM_003072.2	3623	ttgcgtatcgcggcctttaaatac	11694	-	transcription_regulat	translation regulator	-
10781	SNAPC2	NM_003083.1	246	ccggagagccattcagaaagtgc	11704	-	transcription_regulat	transcription factor	-
10782	SNAPC4	NM_003086.1	3202	ccgggtcccacgcctttaaagt	11730	-	see also 2079 line	-	-
10783	SNAPC5	NM_006049.1	95	aagaattagccctccaatcaatg	11737	-	transcription_regulat	transcription factor	-
10784	SNFT	NM_018664.1	536	ctgctctgccctatgaactttgt	11745	-	transcription_regulat	-	-

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10785	SOX13	NM_005686.1	305	tgacattcaacagaaatttgaaa	11750	-	transcription_regulat or	transcription factor	diabetes(糖尿病)
10786	SOX14	NM_004189.2	728	ctgcatagacccttattctgca	11756	-	transcription_regulat or	transcription factor	-
10787	SOX2	NM_003106.2	1060	cagctcgacagacctacatgaacg	11757	-	transcription_regulat or	-	anophthalmia(無眼球症)
10788	SOX5	NM_006940.4	1397	ctgtccacagacagcttagctagt	11777	-	transcription_regulat or	-	-
10789	SOX6	NM_033326.1	376	gagtcgggaccgtgagataatga	11795	-	see also 9400 line	-	-
10790	SOX8	NM_014587.2	1271	ctgcagccctccagctactatgg	11839	-	transcription_regulat or	RNA polymerase II transcription factor	-
10791	SP140	NM_007237.2	575	tagaccacagattactaccatag	11854	-	transcription_regulat or	transcription factor	-
10792	SPBPBP	NM_006692.1	858	tgagcacttactaaagctttac	11876	-	-	-	-
10793	SP1	NM_003120.1	280	acgcaaacacgacagctattaac	11885	-	transcription_regulat or	hematopoietic- associated factor	-
10794	SPIC	NM_152323.1	48	aagctgggtcaagcatttgaaga	11891	-	-	1A complex	-
10795	SREBF1	NM_004176.2	2169	acgcagccctgctctaccataag	11916	-	transcription_regulat or	Sterol regulatory element binding proteins	-
10796	SRF	NM_003131.1	983	gagaccggcaaggcactgattca	11927	-	see also 2113 line	-	-
10797	ST18	NM_014682.1	712	ctgctactctgctctaaaggac	11936	-	transcription_regulat or	-	-
10798	STAT1	NM_007315.2	721	caggctcagtcggggaatttca	12016	-	transcription_regulat or, cell cycle, kinase related	-	STAT1 deficiency(STAT1欠損症), atypical mycobacteriosis(AM症)
10799	STAT2	NM_005419.2	731	aagcactgctaggccgattaact	12065	-	transcription_regulat or	STAT1/STAT2 complex	-
10800	STAT3	NM_003150.2	2121	cagtcctgggaaccacatacaca	12123	-	-	-	-
10801	STAT4	NM_003151.2	1160	aagagtcaccccttctgatctaca	12158	-	see also 2128 line	-	-
10802	STAT5A	NM_003152.2	962	ctgcattccggcacattctgtaca	12211	-	transcription_regulat or	translation regulator	-
10803	STAT5B	NM_012448.2	547	ctgcattccggccatatttgtaca	12231	-	see also 5336 line	-	-
10804	STAT6	NM_003153.3	514	cagcacccttgagagcattatc	12258	-	transcription_regulat or	translation regulator	rheumatoid arthritis(関節リウマチ)
10805	SUPT4H1	NM_003168.1	121	gtgttcgtctggtcaagactatag	12273	-	transcription_regulat or	transcription factor	-
10806	SUPT5H	NM_003169.2	521	ttgaagcctccaatataatgataat	12288	-	see also 2141 line	-	-
10807	SUPT6H	NM_003170.2	2322	ctgtgctgaaagcctctacaatt	12346	-	see also 2142 line	-	-
10808	T	NM_003181.2	1020	gggtccacagcgcgatgcacc	12402	-	transcription_regulat or	translation regulator	-
10809	TADA2L	NM_001488.2	540	aagcgatcatactattgaataa	12407	-	transcription_regulat or, cell cycle	-	-

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10810	TADA3L	NM_006354.2	1233	ctgaccgaactggacactaaaga	12451	-	transcription_regulat or, cell cycle	-	-
10811	TAF10	NM_006284.2	595	ccgcaagtacactctaaccatgg	12458	-	transcription_regulat	RNA polymerase II	-
10812	TAF13	NM_005645.2	272	tgaagatatogtctcttgatt	12469	-	-	transcription factor	-
10813	TAF1B	NM_005680.1	485	aaggaacactacgggtattagaag	12479	-	transcription_regulat	protein binding	-
10814	TAF4	NM_003185.2	1912	aggtataccggagaacttaattc	12533	-	transcription_regulat	transcription factor	-
10815	TAF5	NM_006951.2	853	atgacctacgagtattatctagt	12573	-	transcription_regulat	transcription co- activator	-
10816	TAF5L	NM_014409.2	1023	tagacgtgtccgcacatcatttg	12649	-	see also 4867 line	-	-
10817	TARDBP	NM_007375.2	618	atgtcacagcgacatgataga	12665	-	see also 5664 line	-	-
10818	TBR1	NM_006593.2	1197	tggatcgcccaagaatctcttt	12695	-	-	transcription factor	-
10819	TBX1	NM_005992.1	578	tggatcccatggccgactatag	12703	-	transcription_regulat	-	-
10820	TBX19	NM_005149.1	244	aagaatggcagacggatgttcc	12727	-	see also 3614 line	-	-
10821	TBX2	NM_005994.2	497	ctgacgattgccgctataaagtc	12741	-	transcription_regulat	transcription factor	-
10822	TBX20	NM_020417.1	648	ctggatcaacatggccatataat	12752	-	transcription_regulat	-	-
10823	TBX21	NM_013351.1	644	ctgttggtgccaaagtttaatca	12759	-	transcription_regulat	translation regulator	-
10824	TBX22	NM_016954.2	477	acgctatagtgatcgtctatoca	12773	-	see also 6980 line	-	-
10825	TBX3	NM_005996.2	640	aagtcgggaagcggaatgtttcc	12815	-	transcription_regulat	-	ulnar mammary syndrome(尺屈乳頭症候群)
10826	TBX4	NM_018488.2	1615	tgttcccgagaatcttcttaca	12852	-	transcription_regulat	transcription factor	-
10827	TBX5	NM_000192.3	990	ctgccgacgatcacagatacaaa	12862	-	transcription_regulat	-	Holt-Oram syndrome(Holt Oram 症候群)
10828	TBX6	NM_004608.2	1196	ctgcctgaccgtgtctacattca	12889	-	transcription_regulat	-	-
10829	TCEA1	NM_006756.1	163	acggcgctggagcattgatttg	12898	-	transcription_regulat	general RNA polymerase II transcription factor	-
10830	TCEA2	NM_003195.4	1060	gtgatgccgtgcgcaacaagtgc	12911	-	transcription_regulat	-	-
10831	TCEAL1	NM_004780.1	501	ggggacatacatggcagaaattt	12915	-	transcription_regulat	-	-
10832	TCF1	NM_000545.3	728	gtgcaatagggcgggaatgcaccc	12917	-	transcription_regulat	transcription factor-7-like-2-E	atherosclerosis(粥状硬化症)、diabetes mellitus(糖尿病)、diabetes(糖尿病)
10833	TCF19	NM_007109.1	269	gaggtcacaggctggaattgagt	12919	-	-	-	-
10834	TCF2	NM_000458.1	913	ccgctcccaagcaaatcttgtac	12928	-	see also 355 line	-	-
10835	TCF3	NM_003200.1	1191	cggcctgcagagtagatagaag	12954	-	transcription_regulat	MyoD/E47	-

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10836	TCF7L1	NM_031283.1	399	caggacagcgcgttctttaaagg	12957	-	transcription_regulat	-	-
10837	TCF8	NM_030751.2	554	gaggctataaacgctttacacct	12971	-	see also 8924 line	-	-
10838	TCFL4	NM_170807.2	878	ctggatogaggagcaactgttaagc	13051	-	see also 10023 line	-	-
10839	TEAD2	NM_003598.1	940	tggcctccgagagactatgatc	13062	-	transcription_regulat	translation regulator	-
10840	TEAD3	NM_003214.1	408	ttgcacgctatatataaactgagg	13077	-	transcription_regulat	translation regulator	-
10841	TEAD4	NM_003213.1	1205	gagtatgctcgtctatgagaatgg	13091	-	transcription_regulat	translation regulator	-
10842	TFAP2B	NM_003221.2	927	cagcaaatgtcacgttactcacc	13111	-	transcription_regulat	translation regulator	-
10843	TFAP2BL1	NM_172238.1	1122	gtgtcaacccccacagacttatt	13124	-	see also 2182 line	-	-
10844	TFAP2C	NM_003222.3	994	ctgtcccccacctgaatgcttaaa	13156	-	transcription_regulat	translation regulator	breast cancer(乳癌)
10845	TFOP2	NM_005653.3	1075	gggggtgcattccgagatacaaat	13183	-	transcription_regulat	-	Alzheimer disease(アルツハイマー病)
10846	TFDP1	NM_007111.3	1234	ctgttgaggcgtgttcacacacg	13219	-	transcription_regulat	E2F-4/DP-1 complex	-
10847	TFDP2	NM_006286.1	1117	gtgtaaaccaagggttatgttg	13243	-	or, cell cycle	-	-
10848	TFEB	NM_007162.1	1037	gagacgaaggttcaacatcaatg	13265	-	see also 4376 line	-	-
10849	TFEG	NM_012252.1	1088	aagattggatggcagctgctattgg	13290	-	transcription_regulat	transcription factor	-
10850	TGIF	NM_003244.2	476	ctgtatgagcaccggttaacatgc	13291	-	transcription_regulat	-	-
10851	TGIF2	NM_021809.4	342	cagtgtcgtcaaatatgtaactgg	13313	-	transcription_regulat	-	-
10852	THG-1	NM_030935.3	794	cagcgtcaccacggagactatgagg	13319	-	transcription_regulat	transcriptional repressor	-
10853	THRB	NM_000461.2	566	aagggtacatccccagttactta	13341	-	see also 361 line	-	-
10854	TIEG	NM_005655.1	1190	aagtcactcctcagattgattca	13376	-	transcription_regulat	transcription factor	-
10855	TIX1	NM_015035.2	3225	tggacgtcagctcgaaacagact	13422	-	transcription_regulat	-	-
10856	TLX1	NM_005521.2	1550	gagagtaaccgcagatacacaaa	13427	-	see also 3854 line	-	-
10857	TNRC4	NM_007185.2	1115	gagagactccggagagatttga	13437	-	transcription_regulat	-	-

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10858	TP53	NM_000546.2	384	ctgtcccccggacgacgatattgaaca	13447	-	transcription_regulat or, apoptosis, cell_cycle, signal_transduction	transcription factor	hepatocellular carcinoma(肝癌)、bladder transitional cell carcinoma(膀胱移行上皮癌)、 alveolar cell carcinoma(肺胞上皮癌)、 rhabdomyosarcoma(胞巣状横紋筋肉腫)、 ependymoma(上衣細胞腫)、cancer of the Fallopian tube(卵管癌)、breast cancer(乳癌)、 soft tissue sarcoma(軟部組織肉腫)、leukemia(白 血病)、chondrosarcoma(軟骨肉腫)、rheumatoid arthritis(関節リウマチ)、laryngeal cancer(喉頭 癌)、Li-Fraumeni Syndrome(リー-フラウメニ症 候群)、colorectal cancer(大腸癌)、non-hodgkin lymphoma(非ホジキンリンパ腫)、nasopharyngeal cancer(鼻咽腔癌)、hepatoblastoma(肝芽腫)、 endometrial cancer(子宮癌)、Li-Fraumeni syndrome(リー-フラウメニ症候群)、lung cancer(肺癌)、medulloblastoma(髄芽腫)、 osteosarcoma(骨髄性骨肉腫)、ovarian cancer(原発性卵巣癌)、prostate cancer(前立腺 癌)、Ewing's sarcoma(ユ-イング肉腫)、 carcinoma of the cervix(頸癌)、CNS Tumours(中 枢神経腫瘍)、melanoma(メラノーマ)、dysplastic nevus syndrome(デイスプラスチック・ニューバス症 候群)、head and neck cancer(頭頸部癌)、 colorectal cancers(結腸直腸癌)、Beckwith- Wiedemann syndrome(ベックウィズ・ウィーデマン 症候群)、adamantinoma(アダムチノーマ)、 testicular cancer(睪丸癌)、squamous cell carcinomacytic(扁平上皮細胞癌)、nerve sheath
10859	TP73	NM_005427.1	755	ccgcgtggaggccaataatctct	13468	-	see also 3789 line		
10860	TP73L	NM_003722.3	331	cagaagatgtgtcgacaacaag	13479	-	transcription_regulat or, apoptosis		Limb-mammary syndrome(Limb-mammary 症候 群)、ectodermal dysplasia(外胚葉性形成異常)、 split-hand and split-foot(裂手・裂足)、adult syndrome(adult症候群)、Hay-Wells syndrome(Hay-Wells症候群)
10861	TRIM16	NM_006470.2	546	ccgcacaggtgaacatcaaac	13515	-	transcription_regulat		-
10862	TRIM22	NM_006074.2	359	gagagtcacaagaggccaagatga	13517	-	or		-
10863	TRIM28	NM_005762.2	894	atggtgaacgtactgtctattgc	13531	-	transcription_regulat		-
10864	TRIM29	NM_012101.2	1381	atgcatgcgccacgttgagaaga	13558	-	or		-
10865	TRPS1	NM_014112.1	2177	gggagccgagagataatatgttaa	13626	-	transcription_regulat		-
10866	TSC22	NM_006022.2	347	tggtgcaagtggtgtagctattg	13691	-	see also 5496 line transcription_regulat		-

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10867	TULP4	NM_020245.2	1462	gtgcaggagacgctactatgagg	13778	-	see also 7820 line	
10868	UBP1	NM_014517.2	2025	agggtccaccgggtattcacatt	13862	-	see also 5748 line	
10869	UHRF1	NM_013282.2	1683	cagggtggtgcgcaaatgtcaagg	13876	-	transcription_regulat	-
10870	USF2	NM_003367.1	199	cagttccgcacacagacaaatgg	13881	-	or	
10871	VAV1	NM_005428.2	1789	tggccgacatggcgaagatttcc	13906	-	transcription_regulat	transcription factor -
10872	VDR	NM_000376.1	575	cggcctccagttcgtgtgaatga	13920	-	or	
10873	VENTX2	NM_014468.2	257	gagtaaggagccaaataccttgc	13932	-	see also 300 line	
10874	VSX1	NM_014588.4	908	ctggggctctgaaccacttcaag	13935	-	transcription_regulat	-
10875	WT1	NM_000378.2	1146	agggtaacgagagcgataaccaca	13941	-	or	
10876	XBP1	NM_005080.2	613	tggattctggcgggtattgactct	13957	-	see also 301 line	
10877	YY1	NM_003403.3	1632	gtgccccttcgatgtgtgtaata	13971	-	see also 3549 line	
10878	ZFH4	NM_024721.2	1507	tagtgaactcaccgatagtatt	14019	-	see also 2304 line	
10879	ZFX1B	NM_014795.2	1133	ggggctacaagcgttgacatca	14254	-	see also 8698 line	
10880	ZFP36L1	NM_004926.2	187	gggtaacaagatgctoaactata	14343	-	see also 5974 line	
10881	ZFP36L2	NM_006887.3	1652	cggaccgcgacagctactaagc	14353	-	transcription_regulat	transcription factor -
10882	ZFP37	NM_003408.1	43	cggcgtccagattctgacaaaagc	14355	-	transcription_regulat	transcription factor -
10883	ZFP95	NM_014569.2	1537	cggctgcattcgcacatctgatcg	14386	-	transcription_regulat	zinc binding
10884	ZHX2	NM_014943.2	2880	gaggtcgcgactcagatagatgc	14499	-	transcription_regulat	-
10885	ZNF11B	NM_006955.1	715	gagtcacgtgagaaacactttgc	14504	-	see also 6132 line	
10886	ZNF132	NM_003433.1	499	atgtgtggggccattcttgaaaga	14505	-	transcription_regulat	transcription factor -
10887	ZNF133	NM_003434.3	2453	gggcaaccttcggattccttata	14514	-	transcription_regulat	transcription factor -
10888	ZNF134	NM_003435.1	1343	tagtgaagtcttgactatattg	14524	-	transcription_regulat	transcription factor -
10889	ZNF135	NM_003436.2	318	tgggcgggtggagctagacttcc	14525	-	transcription_regulat	transcription factor -
10890	ZNF137	NM_003438.1	201	ctgtctaagggttcttaatacaaca	14536	-	transcription_regulat	transcription factor -
10891	ZNF140	NM_003440.2	1687	ttgtcaactcattccttattaaac	14564	-	transcription_regulat	transcription factor -
10892	ZNF142	NM_005081.1	2772	gggtagaacaccttaagacaact	14588	-	transcription_regulat	transcription factor -
10893	ZNF145	NM_006006.3	1473	tggggctcagcttcttgataaag	14617	-	transcription_regulat	transcription co-repressor

leukemia(白血病)



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10894	ZNF147	NM_005082.2	158	gcggatcgctgcctgaatgagacg	14624	transcription_regulat	transcription factor	-
10895	ZNF154	NM_003444.1	560	ctggggagcaatcaaatagcaaa	14649	-	-	-
10896	ZNF155	NM_003445.2	612	caggactaccacaaattcataca	14657	transcription_regulat	transcription factor	-
10897	ZNF157	NM_003446.2	1574	ctggcgttgtacaatgaagaag	14675	transcription_regulat	DNA binding	-
10898	ZNF165	NM_003447.2	1436	gaggaggcagtgaccatactaga	14680	transcription_regulat	transcription factor	-
10899	ZNF167	NM_018651.1	659	gtggggacttcgctcaatgtact	14700	transcription_regulat	-	-
10900	ZNF174	NM_003450.1	1506	gagcaaacggttgcaacatcttg	14714	transcription_regulat	transcription factor	-
10901	ZNF175	NM_007147.2	1346	gtgtatatctgacagatcataca	14733	transcription_regulat	transcription factor	-
10902	ZNF187	NM_152736.2	425	cagaacgtgagcagagattcatc	14747	transcription_regulat	transcription factor	-
10903	ZNF189	NM_003452.2	831	tagtcgcagttcattgtttattg	14761	see also 2316 line	transcription factor	-
10904	ZNF19	NM_006961.2	1019	acgagtagttccgagttgttat	14793	transcription_regulat	-	-
10905	ZNF192	NM_006298.1	857	atggctgtgtcccttattogaga	14807	transcription_regulat	transcription factor	-
10906	ZNF193	NM_006299.2	546	gagctcgatgaaccacaacatga	14809	transcription_regulat	transcription factor	-
10907	ZNF197	NM_006991.2	1231	gcgttcgagccttctaagcatt	14839	transcription_regulat	transcription factor	-
10908	ZNF202	NM_003455.1	1149	ttgtgaaccttcgggaactaca	14870	transcription_regulat	specific RNA polymerase II	-
10909	ZNF207	NM_003457.1	387	tagatgcgttaccacaatgcaata	14890	see also 2338 line	transcription factor	atherosclerosis(粥状硬化症)
10910	ZNF211	NM_006385.2	961	aagcatgtacgcgaagatgtaac	14926	transcription_regulat	-	-
10911	ZNF213	NM_004220.1	977	gggagacatcccattctatttt	14931	transcription_regulat	-	-
10912	ZNF215	NM_013250.1	2005	cggagctcctctcttattcgaca	14969	transcription_regulat	zinc binding	Beckwith-Wiedemann syndrome(ベックウイズ・ウィーデマン症候群)
10913	ZNF217	NM_006526.2	394	agggaccgctgtgttcattcc	14977	transcription_regulat	transcription factor	breast cancer(乳癌)
10914	ZNF219	NM_016423.1	2020	cagtcggctgcgtcaagtatca	15051	transcription_regulat	transcription factor	-
10915	ZNF232	NM_014519.2	1073	cggggacatcacccctaagagtg	15056	transcription_regulat	transcription factor	-
10916	ZNF236	NM_007345.1	3367	gagaggggtttccgaactacagt	15134	transcription_regulat	transcription factor	diabetes(糖尿病)

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10917	ZNF24	NM_006965.1	1116	cagaattcgggcttattaatca	15172	-	transcription_regulat or	zinc binding	-
10918	ZNF256	NM_005773.2	798	ctgctcacaccagaaagaagta	15180	-	transcription_regulat or	transcription factor	-
10919	ZNF263	NM_005741.3	1238	tggaaaggttcctgtgtatgc	15190	-	see also 3982 line		
10920	ZNF265	NM_005455.2	199	aggcctatttagtctaataatgact	15215	-	transcription_regulat or	transcription factor	-
10921	ZNF274	NM_016324.2	537	cagatccaggccctatatgtga	15238	-	transcription_regulat or	-	-
10922	ZNF277	NM_021994.1	1299	gtgggatacaactggagattatt	15285	-	transcription_regulat or	transcription factor	-
10923	ZNF287	NM_020653.1	1432	cagggaacaccttcaatcatgtct	15317	-	transcription_regulat or	transcription factor	-
10924	ZNF3	NM_032924.2	1574	gagtaacgaccaggttaaatatc	15334	-	transcription_regulat or	DNA binding	-
10925	ZNF3	NM_017715.1	390	ggggtctactctgggaagatttca	15337	-	transcription_regulat or	-	-
10926	ZNF305	NM_014724.1	1333	tcggcggttcacatactactcagc	15366	-	-	transcription factor	-
10927	ZNF306	NM_024493.1	963	aggagcatgggaagatatcgtgc	15373	-	transcription_regulat or	-	-
10928	ZNF31	NM_145238.2	1372	ctgttcagagtcgtattgcagg	15385	-	transcription_regulat or	DNA binding	-
10929	ZNF323	NM_030899.2	1331	aagcggacactctttaagaaca	15404	-	transcription_regulat or	-	-
10930	ZNF33A	NM_006974.1	1347	ccgtgtgacttcgcaccttaag	15410	-	transcription_regulat or	transcription factor	-
10931	ZNF35	NM_003420.2	311	gtgcaactccgagaaacatcaagt	15413	-	transcription_regulat or	transcription factor	small cell lung cancer(肺癌)
10932	ZNF38	NM_145914.2	728	aggccgagattgcagattgagt	15432	-	transcription_regulat or	zinc binding	-
10933	ZNF394	NM_032164.2	1395	aagccgtacacctgtctgaatg	15453	-	transcription_regulat or	-	-
10934	ZNF396	NM_145756.1	676	cagtccttaagaccacatgatga	15470	-	transcription_regulat or	DNA binding	-
10935	ZNF397	NM_032347.1	175	caggatcctccgggaacaagaact	15485	-	transcription_regulat or	-	-
10936	ZNF41	NM_007130.1	2424	ctgaccgatcaaatctcataaca	15523	-	transcription_regulat or	-	-
10937	ZNF42	NM_003422.2	583	gaggctgtgccttagtagatgg	15526	-	transcription_regulat or	transcription factor	-
10938	ZNF434	NM_017810.2	1756	tagccgaagtcttattctgttc	15544	-	-	-	-
10939	ZNF435	NM_025231.1	501	cagaaagacgggacatactcatg	15550	-	transcription_regulat or	transcription factor	-

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10940	ZNF45	NM_003425.2	1149	aagctcctctgagtagttcatacg	15577	-	transcription_regulat	transcription factor	-
10941	ZNF494	NM_152677.1	1132	gaggatattcccttaagagatgt	15593	-	transcription_regulat	-	-
10942	ZNF495	NM_024303.1	1590	gagccttcagtcggctgaattg	15624	-	transcription_regulat	-	-
10943	ZNF496	NM_032752.1	2143	aagagcttcacgcagaaactatga	15631	-	transcription_regulat	-	-
10944	ZNF70	NM_021916.2	764	cagcatgtgtcagataatccaca	15635	-	-	-	-
10945	ZNF75	NM_007131.1	1196	cagcctatactgttagcttatg	15645	-	transcription_regulat	zinc binding	-
10946	ZNF80	NM_007136.1	617	gggaccaagtaagacacacttgg	15649	-	transcription_regulat	transcription factor	-
10947	ZNF83	NM_018300.2	1928	ccgcgacaattcatatcttctgac	15668	-	transcription_regulat	transcription factor	-
10948	ZNF9	NM_003418.1	468	tggagaattcggacacattcaaa	15676	-	see also 2310 line	-	-
10949	ZNF1A3	NM_012481.3	1320	gaggtcccgctcttaagaact	15713	-	-	-	-
10950	ZNF1A4	NM_022465.2	1752	tggaccacgctcatgttcaactatc	15727	-	transcription_regulat	-	-
10951	ZNRD1	NM_014596.4	190	cagtcggacactggattctgttc	15728	-	transcription_regulat	-	-
10952	BRCA1	NM_007294.1	4329	gaggagataccatgcacataacc	16042	-	see also 5077 line	-	-
10953	DBP1	NM_001923.2	1346	ctggcgtctgacccctaactgtga	16096	-	see also 1223 line	-	-
10954	DBP2	NM_000107.1	467	ctgagattctaccggatattaca	16136	-	damaged DNA binding	-	-
10955	DMC1	NM_007068.2	1146	atgaagccaccttcgcgaataact	16193	-	phosphatase, cell_cycle	damaged DNA binding	Alzheimer disease(アルツハイマー病)
10956	ERCC1	NM_001983.1	466	gggcaatcccgctactgaagttcg	16196	-	-	endodeoxyribonuclease	-
10957	ERCC3	NM_000122.1	1920	aagtagtgtagacacttctgttga	16250	-	transcription_regulat	RNA polymerase II	ichthyosiform erythroderma(鱗屑様紅皮症)、xeroderma pigmentosum(色素性乾皮症)
10958	FANCG	NM_004629.1	1405	ctgctagttgaggccttgaaatgt	16276	-	or, apoptosis	transcription factor	-
10959	FEN1	NM_004111.4	610	aagcccgctgtatgtcttctgtg	16296	-	see also 3144 line	-	-
10960	JTV1	NM_006303.2	396	gcgagtagagccacgactttaac	16306	-	-	endonuclease	-
10961	MPG	NM_002434.1	960	cggaaacccctccgcttctatgt	16333	-	see also 4395 line	alkylbase DNA N-glycosylase	-
10962	MSH2	NM_000251.1	784	aggacctcaaccgggtgttgaaa	16347	-	see also 183 line	-	-
10963	MSH3	NM_002439.1	2157	ttgacgagatccgaatgcatttg	16496	-	-	damaged DNA binding	ataxia telangiectasia(毛細血管拡張性運動失調症)、endometrial cancer(子宮癌)
10964	MSH4	NM_002440.2	1085	tagaacacttcttctaataat	16566	-	-	damaged DNA binding	-
10965	MSH6	NM_000179.1	3186	gcgcgactgttctataactttg	16780	-	-	-	-
10966	NABP2	NM_018177.2	313	ctggatcctcgtatgtgtattt	16821	-	see also 153 line	-	-
10967	NBS1	NM_002485.3	384	aagtcaggagatgtattacttt	16970	-	see also 1591 line	-	-

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10968	OGG1	NM_002542.4	1436	gtgtactagcggatcaagtatgg	17028	-	-	lung squamous cell carcinoma(肺扁平上皮癌)、renal cell carcinoma(腎細胞癌)、non-small-cell lung cancer(非小細胞肺癌)
10969	PNKP	NM_007254.2	306	tggaggttaacccctcaactacc	17050	-	kinase_related、phosphatase	-
10970	POLH	NM_006502.1	1138	atgtgccgaggattgaacatga	17076	-	see also 4548 line	-
10971	POLQ	NM_006596.3	4551	aggagcactaagatagatcatt	17254	-	see also 4627 line	-
10972	RAD1	NM_002853.2	1048	aggtatctatccggacacataaac	17396	-	see also 1883 line	-
10973	RAD18	NM_020165.2	1002	aagactaggatgcgtcttgaagc	17436	-	damaged DNA binding	-
10974	RAD51	NM_002875.2	885	atgatggtagaactctaggtatgc	17470	-	see also 1917 line	-
10975	RAD51C	NM_002876.2	377	gggtggagtgcccttaataaaa	17486	-	phosphatase	-
10976	RAD51L1	NM_002877.3	936	tagccgcactaggaaataactctgg	17537	-	phosphatase、transcription_regulat	leiomyoma(血管筋腫)、uterine leiomyoma(子宮平滑筋腫)
10977	RAD51L3	NM_002878.2	992	gtgtgacccaacacataactcgc	17548	-	or	-
10978	REV1L	NM_016316.1	2972	cagtgagcagtgagacttaacc	17630	-	see also 6805 line	-
10979	TIAF1	NM_004740.2	184	cgggtccaggttcttaagaatga	17662	-	apoptosis、kinase_related	-
10980	XPA	NM_000380.2	587	atgggtgatatagaactctact	17733	-	-	-
10981	XPC	NM_004628.2	590	gggcgatgaacacgttcaataaa	17758	-	single-stranded DNA binding	xeroderma pigmentosum(色素性乾皮症)、melanoma(メラノーマ)
10982	XRCC1	NM_006297.1	1834	atgaatgacccgggttcagtttgt	17804	-	damaged DNA binding	head and neck squamous cell carcinoma(頭頸部扁平上皮細胞癌)
10983	XRCC2	NM_005431.1	346	ttgatctgctccggcctagttaaa	17810	-	damaged DNA binding	-
10984	XRCC3	NM_005432.2	503	gagaacggcctccttacacttgc	17837	-	phosphatase、transcription_regulat	-
10985	ASF1A	NM_014034.1	462	aggcgttaactgtgtgtctaatta	17846	-	or	melanoma(メラノーマ)
10986	BAF53A	NM_004301.2	1295	aagtatgcggttgaaattgattg	17894	-	see also 5464 line	-
10987	CBX4	NM_003655.1	264	gggctggtcgcccaataataaac	17901	-	signal transduction	-
10988	CBX5	NM_012117.1	644	ggactgacatggcatgcatatc	17923	-	see also 2476 line	-
10989	CBX7	NM_175709.1	536	gcggctctcgcgaagaagtcc	17929	-	lamin/chromatin binding	-
10990	CBX8	NM_020649.1	191	aggatggtcgcagaagacagc	17931	-	transcription_regulat	-
10991	CDYL	NM_004824.2	1580	tggctgtctaccgttatgttc	17962	-	or	chromatin binding
10992	CDYL2	NM_152342.1	351	aggccctcgggttgagaactgt	17971	-	transcription_regulat	-
10993	CENPA	NM_001809.2	310	aagagcacacacctcttgataag	17987	-	-	-
10994	CENPB	NM_001810.4	1346	aggagggaggtgatgttatgt	17995	-	chromatin binding	-
						-	satellite DNA binding	-

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10995	CHAF1A	NM_005483.1	1430	cgggcgtggagccgctttccatcc	18023	-	cell_cycle	histone-specific chaperone	-
10996	CHAF1B	NM_005441.1	941	ctgtcgggtctactttgaactga	18054	-	gpcr, cell_cycle, transcription_regulat	signal transducer	-
10997	CHD1	NM_001270.1	2603	gtgcggatgttagatatactgc	18153	-	see also 832 line	-	-
10998	CHD2	NM_001271.1	5733	ggggacggcgagacatatggtgc	18344	-	transcription_regulat	chromatin binding	Alzheimer disease(アルツハイマー病)
10999	CHD5	NM_015557.1	1697	ctgtaccacacgggtgatgtatcg	18356	-	transcription_regulat	-	-
11000	CHD6	NM_032221.3	6386	gagctcggagctccactattgc	18496	-	see also 9120 line	-	-
11001	EZH1	NM_001991.2	192	atgcacttcgacaacttaaacg	18525	-	see also 1278 line	-	-
11002	HTATIP	NM_006388.2	1161	ttgatggacgtaagaacaagagt	18575	-	see also 4476 line	-	-
11003	ING1L	NM_001564.1	352	gagagcactaattaatagtcgaag	18590	-	signal_transduction	-	-
11004	MGC10561	NM_032647.2	143	gcggctggtcctccaaacataac	18606	-	transcription_regulat	-	-
11005	MORE4L1	NM_006791.1	816	ttgggtaccagctactctataa	18607	-	transcription_regulat	-	-
11006	MPO	NM_000250.1	574	ctgtggcgaaggccattcaatgt	18608	-	chromatin binding	-	-
11007	MYST1	NM_032188.1	935	gagtcctccggatggaacaatgt	18637	-	Smad3/Sp-1 heterodimer	myeloperoxidase deficiency(ミエロペルオキシ ダーゼ欠損症)、Alzheimer disease(アルツハイ	-
11008	NCOA6	NM_014071.2	598	cagcgtcgtgtgacattcaaca	18641	-	-	-	-
11009	NSBP1	NM_030763.1	894	gagagaccacagagattgttta	18775	-	see also 5477 line	-	-
11010	PB1	NM_018165.2	4641	tcgaagacgagcgtccatttgt	18882	-	transcription_regulat	-	-
11011	RBP1L1	NM_016374.4	1428	aagatagaggtacacatttaac	18903	-	see also 7297 line	-	-
11012	SMARCC1	NM_003074.2	1325	aggaactgtagcggatctagatg	19028	-	see also 6844 line	-	-
11013	SMARCC2	NM_003075.2	601	gggtacgaccagctcatgaagagg	19080	-	see also 2062 line	-	-
11014	SMARCE1	NM_003079.3	1260	aaggaaccagtgatagtaacact	19109	-	see also 2063 line	-	-
11015	SUV39H1	NM_003173.1	1222	aagaagcgggtcgtattgaatg	19130	-	transcription_regulat	-	-
11016	SUV39H2	NM_024670.3	1007	cggctcgtatcacgcaatgtct	19154	-	or	-	-
11017	BRC42	NM_000059.1	7223	gtgtaccctttcgccacactaag	19363	-	see also 8695 line	-	-
11018	ERCC5	NM_000123.1	2729	gggattggaccgggaataagttaa	19529	-	see also 34 line	-	-
11019	HNRPD1	NM_005463.2	1293	gtgattggcccggtactctct	19570	-	see also 88 line	-	-
11020	IGHMBP2	NM_002180.1	2311	caggctcgggtccaccacaataag	19605	-	see also 3802 line	antigen binding	-
11021	KHDRBS1	NM_006559.1	1248	aaggtctacgaagcttattacagc	19623	-	or	-	-
11022	PIR51	NM_006479.2	52	tgttcggcctgtgagacataag	19653	-	cell_cycle, signal_transduction	-	-
11023	POLG2	NM_007215.1	1210	ttgttggcccttataaggttg	19699	-	-	-	-
11024	RAD23B	NM_002874.2	908	cgggtcagctcttacgagaatg	19724	-	see also 5024 line	-	-
11025	RBMS1	NM_002897.2	1212	gtggctgtggagcgtctaataga	19758	-	see also 1914 line	-	-
						-	see also 1936 line	-	-

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11026	RPA1	NM_002945.2	1160	cagcccgctgtggctatcaagg	19795	-	see also 1989 line	
11027	RPA2	NM_002946.3	1029	gagcaatgaggagcacatctatt	19831	-	see also 1990 line	
11028	RPA3	NM_002947.2	1525	tagggattgtcaacatgattga	19842	-	-	single-stranded DNA binding
11029	SSBP1	NM_003143.1	79	atgttcgaagacctgtattaca	19847	-	-	single-stranded DNA binding
11030	SSBP2	NM_012446.2	272	aagttagcactctacgtatatga	19865	-	see also 5334 line	
11031	SSBP3	NM_018070.2	1025	cagtgaacaacatctacacaatga	19879	-	transcription_regulat	-
11032	SSBP4	NM_032627.1	282	tggcgcgtgtacgtttatgagtagc	19882	-	see also 9263 line	
11033	WBP11	NM_016312.2	1007	aagtgaacggagatgaattgtgc	19926	-	-	-
11034	CGGBP1	NM_003663.2	357	atggagcgaattgtagtaacagc	19930	-	-	-
11035	G22P1	NM_001469.2	2057	aagcttcgcttcacatacagaag	19941	-	-	Ku70/80 antigen complex
11036	IFI16	NM_005531.1	2346	gagatctgttaattcatagtcaca	19978	-	transcription_regulat	transcriptional repressor
11037	MRE11A	NM_005590.2	690	ttgcgctatatgtgttaggattcc	19993	-	-	-
11038	MTERF	NM_006980.2	825	aagcgggtgaaagctaactatga	20067	-	transcription_regulat	transcription termination factor
11039	NP220	NM_014497.2	1833	cggctcgaagcccaatgcatta	20140	-	see also 5721 line	
11040	SAFB	NM_002967.2	1728	gggaccgaacggcactgtagtaat	20293	-	transcription_regulat	-
11041	XROC5	NM_021141.2	1198	atggtggccatagttcgatatgc	20325	-	see also 8105 line	
11042	MBD2	NM_003927.3	902	ctgcgaacacgacatcctcaatca	20354	-	see also 2688 line	
11043	MBD4	NM_003925.1	1548	aagcttctcatcgtctactatatt	20394	-	-	-
11044	MLH3	NM_014381.1	3516	tagcgaatcgtctcagttcttct	20490	-	-	satellite DNA binding
11045	ORC2L	NM_006190.3	1344	atgggtactttccgcagtatact	20543	-	see also 4277 line	
11046	ORC3L	NM_012381.2	165	aagcttcgattcgaaacttatca	20575	-	-	-
11047	ORC4L	NM_002552.2	251	cagagtcacatatagtaacctatt	20640	-	see also 1642 line	
11048	ORC5L	NM_002553.2	245	atgaacacaaaacgttgtgaaa	20680	-	see also 1646 line	
11049	TERF2	NM_005652.2	438	cagtgtctgtcgcgagattgaaga	20722	-	see also 3921 line	
11050	TERT	NM_003219.1	651	gcgaacgggcttgaaccatagc	20742	-	telomeric template RNA reverse transcriptase	leukemia(白血病)
11051	KIF2C	NM_006845.2	1942	cagatgtccagcttttaacgaagc	20797	-	-	microtubule motor
11052	ZW10	NM_004724.2	1457	ttgccacacatgccgtatcagtaga	20842	-	cell_cycle	-

图 46 (续七)

[illegible]

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11080	BAZ2B	NM_013450.1	4263	gtgcacgtgtgtattatcagaaca	22455	-	transcription_regulat	-	-
11081	BBX	NM_020235.2	1063	ttgccagagatattctcaagtaag	22523	-	see also 7810 line	-	-
11082	BDP1	NM_018429.1	5592	ctgtccacacacccgttaaacgaaa	22667	-	-	-	-
11083	BHC80	NM_016621.2	1762	gtgtcccgctgtatattcttgg	22732	-	see also 6953 line	-	-
11084	BLM	NM_000057.1	1998	gagcgtttccaagcttagttt	22786	-	see also 30 line	-	-
11085	BOC	NM_033254.2	858	cagaggtaactacacgtgcatgc	22869	-	see also 9387 line	-	-
11086	BRD1	NM_014577.1	2391	tagataactgcgatgaagtacaat	22932	-	transcription_regulat	molecular_function	Alzheimer disease(アルツハイマー病)
11087	BRP1	NM_032043.1	1790	ttgcgattcaacagacttactcc	23006	-	see also 9068 line	-	-
11088	BRPF1	NM_004634.1	937	gtgtacgtgtgtcccttatcc	23082	-	see also 3148 line	-	-
11089	BS69	NM_006624.1	837	ctgacattcgaggatgctatat	23123	-	see also 4684 line	-	-
11090	C11orf13	NM_003475.2	350	ccggaacgctgcctaatctgtgc	23145	-	transcription_regulat	DNA binding	-
11091	C14orf106	NM_018353.2	1673	ttgatagacgtcactaacatata	23182	-	-	-	-
11092	C14orf146	NM_152447.2	1629	gtgtatgataaacggaacacttga	23274	-	see also 9869 line	-	-
11093	C20orf100	NM_032883.1	697	aggagtcggaagtgcatttoaaag	23313	-	transcription_regulat	-	-
11094	C20orf104	NM_016436.3	230	aagcgttggaaccatcggtatga	23323	-	transcription_regulat	-	Alzheimer disease(アルツハイマー病)
11095	C21orf127	NM_013240.2	288	gagacagcagcgtgttaacaaagt	23388	-	-	S-adenosylmethionine-dependent methyltransferase	-
11096	C21orf66	NM_013329.2	1166	atgactccggttactattgattt	23418	-	see also 5401 line	-	-
11097	CACNA1A	NM_000068.2	5807	cagctgtgcgtcggttcattat	23567	-	see also 40 line	-	-
11098	CARP-1	NM_018237.1	957	cagcctctctgttctgtatgttct	23607	-	see also 7330 line	-	-
11099	CBF2	NM_005760.1	158	aggacacaaagcaagattaccctta	23679	-	see also 4017 line	-	-
11100	CCNL1	NM_020307.1	744	cagctctggaaccatgtgttg	23768	-	see also 7825 line	-	-
11101	CDC5L	NM_001253.2	1941	tagaacccgctttaaagcagattta	23839	-	transcription_regulat	-	Alzheimer disease(アルツハイマー病)
11102	CEBPG	NM_001806.2	324	gggtgaacggaattagtgttct	23854	-	transcription_regulat	translation regulator	-
11103	CENPC1	NM_001812.1	2548	aggatctgtctgtataaagatga	23936	-	-	DNA binding	-
11104	CENTA1	NM_006869.1	1277	tggagcgcacttaacagataaa	23975	-	see also 4808 line	-	-
11105	CENTA2	NM_018404.1	244	ctgcggcgtccaccgttaactcc	23978	-	see also 7449 line	-	-
11106	CENB1	NM_014716.1	233	ccgttccagcctctattgagc	23997	-	see also 5909 line	-	-
11107	CENB2	NM_012287.3	397	ctgtgttgagacaaagtttggcc	24025	-	-	GTPase activator	-
11108	CENB5	NM_030649.1	976	ggagccctgacagctgctatag	24087	-	-	-	-
11109	CENTD1	NM_015230.2	4348	aggaaacccgactgtatgtattata	24215	-	signal transduction	-	Alzheimer disease(アルツハイマー病)
11110	CENTD2	NM_015242.2	1112	ccggtctctcagcgttactctgc	24265	-	see also 6286 line	-	-
11111	CENTG1	NM_014770.1	695	atgaacgctgcagcactatga	24292	-	-	-	-
11112	CENTG2	NM_014914.1	839	cgtgacctgacgggacatatgt	24302	-	-	-	-



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11113	CENTG3	NM_031946.3	261	ccgctcgcgtaccggagcttaag	24319	-	signal transduction	-	-
11114	CHC1	NM_001269.2	898	aggccgtgctcgtgattttg	24340	-	see also 831 line	-	-
11115	CHD1L	NM_024568.1	1818	gggcccgtactactcgaataaag	24380	-	-	-	-
11116	CHRA1	NM_017444.3	357	atgcctagccacctattctaca	24385	-	-	-	-
11117	CHTF18	NM_022092.1	62	gtcggcgctcgtgaggtattcc	24389	-	-	-	-
11118	CIC	NM_015125.2	2220	tagtgatttcgggacaaagctcg	24411	-	transcription_regulat	-	-
11119	CIP29	NM_033082.1	336	gaggcctgaacgattcaatgtac	24422	-	transcription_regulat	-	-
11120	CNTN1	NM_001843.2	1618	cagatcctacgcgaattatttg	24479	-	see also 1191 line	DNA binding	-
11121	COPEB	NM_001300.3	842	gggtgcaccgggtgccactttaac	24544	-	transcription_regulat	translation regulator	prostate cancer(前立腺癌)
11122	CREB3	NM_006368.4	635	cagcgtcgtgtgaacattctcagc	24552	-	transcription_regulat	-	-
11123	CREB3L3	NM_032607.1	1339	ccgcgaacctgaccaatttcgacg	24568	-	transcription_regulat	-	-
11124	CREB3L4	NM_130898.2	1103	cagctgcagacgctgaattgctca	24573	-	transcription_regulat	-	-
11125	CREB5	NM_004904.1	361	cggatattctcgtatgcataatgc	24588	-	see also 3409 line	-	-
11126	CREBL1	NM_004381.3	1724	ctgtggccagcgtgcaactatat	24613	-	see also 2939 line	-	-
11127	CRY1	NM_004075.2	1015	tggacaaccgcctcttaactata	24633	-	see also 2746 line	-	-
11128	CSEN	NM_013434.3	416	gtggaagaagacaccttcaaac	24677	-	transcription_regulat	transcription co-repressor	-
11129	DIS15E	NM_007158.2	497	ctgcgtgaaactggggatttga	24679	-	or, see also 4961 line	-	-
11130	DC8	NM_015471.2	150	cggcctgtgaccggaatgctaca	24737	-	-	-	-
11131	DDEF2	NM_003887.1	477	tggaccggatgtgtctttacaaa	24751	-	-	-	-
11132	DDX3X	NM_001356.2	1975	gggtgtccgccacactatgatgt	24892	-	see also 901 line	-	-
11133	DDX3Y	NM_004660.2	1143	cagatagctcgtatgttgaca	24916	-	see also 3179 line	-	-
11134	DDX48	NM_014740.1	1383	gagatagcagcagctactattcc	24965	-	translation initiation factor	-	-
11135	DEAF1	NM_021008.2	1304	ccgtacgggtgcgggaacatcagc	24973	-	DNA binding	-	-
11136	DEDD	NM_004216.2	807	gcgccagtttgagcgccttaacc	24991	-	apoptosis, transcription_regulat	-	-
11137	DEDD2	NM_133328.2	805	ccgtggttttgacatcaagttc	24995	-	or, apoptosis, transcription_regulat	-	-
11138	DEK	NM_003472.2	811	aaggctaaagcgaaccaaagtcc	25010	-	transcription_regulat	specific RNA polymerase II	-
11139	DHX9	NM_001357.2	3444	cagttggaccctcgtaaatgaacg	25108	-	or, signal_transduction	transcription factor	leukemia(白血病)
11140	DKFZp434I1930	NM_032255.1	1450	cagctccatgctcgatcaagtg	25122	-	see also 902 line	-	-

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11141	DKFZP564 10422	NM_031435.1	756	ttgtaccctataaagtctatga	25142	-	see also 9024 line	
11142	DKFZP564 1052	NM_015534.3	1205	gggatacggatatacccaacttca	25179	-	see also 6456 line	
11143	DMAP1	NM_019100.3	575	ccgaagaagcaggagcaatgttct	25241	-	transcription_regulat or	transcriptional repressor
11144	DNAJC1	NM_022365.2	1709	ctgtatcgtctaggacaaagtgc	25292	-	see also 8346 line	-
11145	DNASE1L1	NM_006730.1	1083	gagacgtatgtactctctatcg	25297	-	-	endonuclease
11146	DNASE1L2	NM_001374.1	158	tcgcacatggagccctcaacattc	25304	-	-	endonuclease
11147	DNASE1L3	NM_004944.1	310	gagagcataaacatacaactatg	25308	-	-	endonuclease
11148	DNASE2	NM_001375.1	872	taggcatactgcctcttaactgc	25322	-	see also 942 line	-
11149	DNMT1	NM_001379.1	4097	tgtccgcgatggctatcagtcg	25382	-	see also 949 line	-
11150	DNMT2	NM_004412.3	868	ctgcgatgtctcttctgttaga	25418	-	see also 2956 line	-
11151	DNMT3B	NM_008892.3	623	cagctgtcgaactcgaataaac	25457	-	see also 4823 line	-
11152	DNTT	NM_004088.2	1039	aggcttcggaggggtaagaaga	25518	-	-	magnesium binding
11153	DOT1L	NM_032482.1	106	ctgcgggtctacgataaacatca	25534	-	see also 9213 line	-
11154	DPF1	NM_004647.1	771	aggacacccctcgtgtttacaat	25569	-	apoptosis, transcription_regulat or	DNA binding
11155	DR1	NM_001938.1	663	tgtgaactctgcactgaattc	25590	-	see also 1236 line	-
11156	DRAP1	NM_006442.2	340	cggcggtgcctgtcatcatctcc	25601	-	transcription_regulat or	-
11157	DRF1	NM_025104.2	478	gtgtccagccgcgagagaagttaa	25603	-	kinase_related	-
11158	DRIL2	NM_006465.1	563	gtggacccatgtcccaactctact	25627	-	-	-
11159	DRLM	NM_153757.1	340	aagcgatgcgataagatagaagc	25636	-	-	-
11160	EBF	NM_024007.2	1146	ttgatgggttacaggtcatattc	25686	-	see also 8555 line	-
11161	EBF2	NM_022659.1	644	aagggtacatccgcgaacacaagc	25703	-	transcription_regulat or	-
11162	ECE2	NM_014693.1	1676	atgttatgacgggtacgaaatt	25736	-	signal_transduction , gpcr	zinc binding
11163	EDF1	NM_003792.2	339	aggtgatcgcggactatgagagc	25748	-	transcription_regulat or	-
11164	EGR2	NM_000399.2	656	ctgctaccaccaagagcataatca	25757	-	transcription_regulat or	hereditary motor and sensory neuropathy(遺伝 性運動性ネフロパシーおよび遺伝性感覚性ネフ ロパシー)、neuropathy(ニューロパシー)、 Charcot-Marie-Tooth neuropathy(シャルコー・マ リー・トゥース神経障害)
11165	EIF4A1	NM_001416.1	493	tggccgtgtgtttgatatgctta	25763	-	-	-
11166	EIF4A2	NM_001967.2	20	ctgttgctccgcggattataac	25768	-	see also 1245 line	-
11167	ELYS	NM_015446.1	4504	tggaaactctctgcctcactatct	25886	-	see also 6421 line	-
11168	ENDOG	NM_004435.1	786	ctgatgggaatctctactgaag	25940	-	-	-
11169	EP400	NM_015409.2	5850	cagccgtaccacagagataaac	26016	-	-	magnesium binding
11170	ERCC4	NM_005236.1	2056	gtggatatcgtgaatttcgaag	26128	-	see also 3671 line	-

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11171	ERN1	NM_001433.1	1104	cagcagcagcgtcaagttgatc	26174	-	see also 1002 line		
11172	EVH1	NM_005241.1	2105	aaggaagcaacgtggaatcaaga	26231	-	see also 3673 line		
11173	EXO1	NM_003686.3	2093	cagatgacacgaatcaagt	26333	-	see also 2505 line		
11174	EZH2	NM_004456.3	1407	aagcaaatctcgtgtcaaca	26386	-	see also 2990 line		
11175	FALZ	NM_004459.5	5919	ttggtcttatggcattgatct	26534	-	transcription_regulat	-	
11176	FBXL11	NM_012308.1	3264	atgcacagcttcgcctcataatt	26667	-	transcription_regulat	-	
11177	FCRH3	NM_052939.2	463	ttggtatcacgtagaagttgt	26679	-	or	-	
11178	FLJ10876	NM_018254.2	556	caggctgtaaacctagctaatag	26725	-	see also 7346 line		
11179	FLJ12178	NM_025134.2	1724	ctggttaactcgttaactcatatga	26796	-	-	-	
11180	FLJ12800	NM_022903.2	1403	tagcggctcctcggatgatgagg	26936	-	-	-	
11181	FLJ13111	NM_025082.1	785	tggctcccccacacgtatcact	26945	-	-	-	
11182	FLJ14260	NM_025027.2	1212	gtgcccttacggaccattttgg	26986	-	transcription_regulat	-	
11183	FLJ14281	NM_024920.3	2317	ctgtacactaacacacataaac	27007	-	or	-	
11184	FLJ20125	NM_017676.1	328	gagctcatcatggtatataccagg	27019	-	see also 7107 line		
11185	FLJ20203	NM_032292.3	4062	tggatcccttgagcgtgatattt	27098	-	-	-	
11186	FLJ21439	NM_025137.2	2893	gagcgtattggagggtatattac	27173	-	-	-	
11187	FLJ23017	NM_022840.2	1311	aagggtatgtaagccattacttt	27304	-	see also 8492 line	-	
11188	FLJ23119	NM_024652.2	2364	gagatcaggcctcgcattgtata	27359	-	kinase_related	-	
11189	FLJ23436	NM_024671.2	943	agggccctcgcgcctaacatctgc	27388	-	transcription_regulat	-	
11190	FLJ36070	NM_182574.1	1206	gaggcgagtgctctctctaacc	27391	-	see also 10271 line		
11191	FLJ38964	NM_173527.1	515	gagacgcatcattggtggataagg	27396	-	see also 10080 line		
11192	FOS	NM_005252.2	223	ccgggagatagcctctcttactac	27401	-	transcription_regulat	zinc binding	osteosarcoma(骨腫性骨肉腫)
11193	FOSB	NM_006732.1	1477	ttgttaaccttcgtacacttct	27418	-	transcription_regulat	transcription factor binding	
11194	FUS	NM_004960.1	651	tgggggttatggcaatcaagacc	27423	-	-	RNA binding	soft tissue sarcoma(軟部組織肉腫)、leukemia(白血病)、myxoid liposarcoma(粘液性脂肪肉腫)、osteosarcoma(骨腫性骨肉腫)
11195	GASC1	NM_015061.1	2989	tggcccgatggcaaacctctatgg	27491	-	see also 6215 line		
11196	GCM1	NM_003643.1	623	gagcacgacgagcagcgtttatat	27510	-	transcription_regulat	DNA binding	
11197	GCM2	NM_004752.1	588	aagcgccatcaagagacaaatagg	27540	-	transcription_regulat	-	
11198	GFI1	NM_005263.1	563	cagcctcggagaaagtaaatgtgc	27573	-	transcription_regulat	RNA polymerase II or, cell cycle	
11199	GIOT-1	NM_153257.1	1623	aaggcgtttaatcatagattaca	27587	-	transcription_regulat	-	
11200	GIT1	NM_014030.1	719	tggacgcaagccggatcaacaga	27594	-	signal_transduction, gpcr	DNA binding	

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11201	GIT2	NM_014776.2	434	ctgccaggatgacgatagtgtga	27616	-	signal_transduction , gpcr	-	-
11202	GLI	NM_005269.1	997	gggtgccggaagtctatactcag	27659	-	transcription_regulat or,	RNA polymerase II transcription factor	liposarcoma(脂肪肉腫)、glioblastoma multiforme(多形性膠芽腫)
11203	GLI4	NM_138465.2	615	cggcaagaggtttcaagataact	27692	-	-	molecular_function unknown	-
11204	GMEB1	NM_006582.2	1644	cggcctaacctcggcaattcagg	27712	-	transcription_regulat or	-	-
11205	GMEB2	NM_012384.2	610	ggggcgacctgacgggaagataac	27715	-	transcription_regulat or	RNA polymerase II transcription factor	-
11206	GTF2F1	NM_002096.1	190	aggcccttagcagccagaatgtca	27730	-	transcription_regulat or, kinase_related	Transcription initiation factor IIF, complex	-
11207	GTF2F2	NM_004128.1	173	gtggctagtcaaggctctaaat	27741	-	-	Transcription initiation factor IIF, complex	-
11208	GTF3A	NM_002097.1	743	aaggccacagaggcctatgtg	27769	-	transcription_regulat or	RNA polymerase III transcription factor	-
11209	GTF3C1	NM_001520.1	344	aggatgtctacccccattcatatg	27796	-	or	-	-
11210	H1F0	NM_005318.2	557	ctgactcgagatcaagttgtcc	27880	-	-	DNA binding	-
11211	H1F0O	NM_153833.1	268	tggacgtctcgcgtccaagtac	27883	-	-	-	-
11212	H1FX	NM_006026.2	455	cggcgtgtccccctctctaagaag	27889	-	-	DNA binding	-
11213	H2AFY	NM_004893.2	1175	cagttacttctgtctacaatgt	27903	-	-	-	-
11214	H2AFY2	NM_018649.1	1051	cagtgaggctccgcacaaatgtga	27924	-	-	DNA binding	-
11215	H3F3B	NM_005324.3	439	gggtctgttggaaagataccaacc	27928	-	-	DNA binding	-
11216	HBP1	NM_012257.2	1005	tggcgaagtctgtactgaagtga	27945	-	see also 5233 line	-	-
11217	HBXAP	NM_016578.3	2429	atgtggctcgtactttaagaaga	28019	-	transcription_regulat or	-	-
11218	HELLS	NM_018063.3	2503	tgttagatcgaagtgtattat	28127	-	see also 7231 line	-	-
11219	HEMK	NM_016173.1	306	gggttatccagtgccatagaact	28136	-	-	protein methyltransferase	-
11220	Hes4	NM_021170.2	252	gogccggagcgcgtatttaacgaga	28150	-	transcription_regulat or	-	-
11221	HIPK1	NM_152696.3	1791	cggaggggttcacatgtatgtatc	28198	-	see also 9919 line	-	-
11222	HIST1H1A	NM_005325.2	648	agggtgacacgaagcgaagactgc	28243	-	-	DNA binding	-
11223	HIST1H1B	NM_005322.2	216	aggagcgcaatggccttttttg	28245	-	-	DNA binding	-
11224	HIST1H1C	NM_005319.3	313	gggcactctgtgtcacaacgaag	28250	-	-	DNA binding	-
11225	HIST1H1D	NM_005320.2	670	ggggaagccgaaggttacaaagg	28260	-	-	DNA binding	-
11226	HIST1H1E	NM_005321.2	178	gtgtccgagctcattactaaagc	28263	-	-	DNA binding	-
11227	HIST1H1T	NM_005323.3	122	aggaaagccggctggcttgataag	28267	-	-	DNA binding	-
11228	A	NM_170745.2	253	cagctagcgcacccgaatgatga	28287	-	-	-	-
11229	HIST1H2A	NM_003510.2	41	aggctaagaccgcttctcaagg	28291	-	-	DNA binding	-

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11230	HIST1H2B	NM_170610.2	97	aggaccgctaaggagaggtatttc	28295	-	-	-	-
11231	HIST1H2B	NM_003521.2	39	aggctccaagaaggccattaaca	28301	-	-	DNA binding	-
11232	HIST1H2B	NM_003527.4	39	atgcccgaccggcgttaaatctgc	28302	-	-	DNA binding	-
11233	HIST1H3C	NM_003531.2	55	aagcagcttgctactaaagcagc	28306	-	-	DNA binding	-
11234	HIST1H4A	NM_003538.3	135	gcgactctcgtctcgtatctacg	28307	-	-	DNA binding	-
11235	HIST1H4F	NM_003540.3	17	aaggtgttaaaaggttttaggaag	28311	-	-	-	-
11236	HIVEP1	NM_002114.1	4723	cagctcaactagtacatctttagc	28416	-	see also 1362 line	transcription_regulat	-
11237	HKR1	NM_181786.2	1324	caggctcaagccttatgtgtgc	28515	-	or	-	-
11238	HMG2L1	NM_005487.2	726	atggtggtctccacaaatcgaaa	28527	-	see also 3815 line	transcription_regulat	-
11239	HMG4L	NM_178467.1	219	gggagagcaagaacgcatcctaag	28559	-	or	DNA binding	-
11240	HMGN3	NM_004242.2	209	gaggggcaaatgagatggatccaaagt	28561	-	-	-	-
11241	HNRPD	NM_002138.2	722	aagaatcgagagatgtatgataag	28570	-	see also 1368 line	-	-
11242	HNRPK	NM_002140.2	460	ccgagcgcatatttgatgatacgt	28587	-	-	-	-
11243	HNRPU	NM_004501.2	2334	gggaatcgtggcgggataataag	28630	-	see also 3053 line	-	-
11244	HP1-BP74	NM_016287.1	140	ctgataccagcgagacaagttagg	28642	-	see also 6786 line	-	-
11245	HRB	NM_004504.3	1271	atcggtatacttcacaaagtaat	28693	-	see also 3058 line	-	-
11246	HRBL	NM_006076.3	247	cggggtcaactactcgtggatata	28704	-	-	-	-
11247	HSPC133	NM_014168.1	333	aagcgcattggaaattttaat	28718	-	-	-	-
11248	HSPC195	NM_016463.5	1479	cagcagttgtaggatgataaaga	28721	-	kinase_related	-	-
11249	HT001	NM_014065.2	444	tgggtatccggaggactaatgagt	28722	-	-	-	-
11250	HTR3A	NM_000869.1	388	aagccaaccacccgtatccattga	28777	-	channel, receptor_activity	serotonin-activated cation-selective channel	-
11251	IDAX	NM_025212.1	341	cagactgcccgcgagaatcattcc	28800	-	signal_transduction	-	-
11252	ILF3	NM_004516.2	715	tgcacgatctcgcgattgtgata	28819	-	transcription_regulat	-	-
11253	ING1	NM_005537.3	1578	gtgcgtgggggtcgaataataaac	28849	-	cell_cycle, transcription_regulat	-	-
11254	ING3	NM_019071.2	379	tggcaaacccagatatatactgctg	28861	-	see also 7687 line	-	breast cancer(乳癌)、gastric cancer(胃癌)
11255	ING4	NM_016162.2	527	gtgcgcacaagtcctgagatagg	28899	-	transcription_regulat	-	-
11256	INSM1	NM_002196.1	1593	cggccttacgcggcacatcaaca	28903	-	transcription_regulat	DNA binding	-
11257	IRLB	NM_005848.1	2308	ggcgggtgaagtacgacttatag	28983	-	-	-	-
11258	JADE1	NM_024900.2	391	ctgaatccggatgagtgactatgt	29110	-	apoptosis, transcription_regulat	-	-
11259	JDP2	NM_130469.2	483	cagcccgatgccgggaacaagaag	29140	-	see also 9546 line	-	-

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11260	JMJ	NM_004973.2	3383	atgaagctgcgcctatagctaa	29183	-	see also 3457 line	
11261	JMJ2	NM_014663.1	1666	ctggctcttcacggattctatc	29221	-	see also 5842 line	
11262	JRK	NM_003724.1	1449	gggcattcggagagattcattga	29266	-	-	-
11263	JRKL	NM_003772.2	811	gtccgcaagttcggagatttt	29291	-	-	-
11264	KCNMA1	NM_002247.2	3144	gagcgagacttactcaatgaca	29390	-	see also 1439 line	
11265	KIAA0211	NM_014630.1	3582	gagcagcgtcggacattgaagc	29423	-	see also 5798 line	
11266	KIAA0222	NM_014643.1	858	gagccagttcggagcgtgaagaag	29435	-	see also 5815 line	
11267	KIAA0296	NM_014699.1	1802	tggacatcggccctataagtgc	29468	-	see also 5895 line	
11268	KIAA0352	NM_014830.1	1235	ccgaaactccgggtaactcatg	29495	-	see also 6040 line	
11269	KIAA0478	NM_014870.2	446	atgatgtacacggggcaactacc	29511	-	transcription_regulat	DNA binding
11270	KIAA0628	NM_014789.1	797	ttgagcatcagcgcgttcattca	29551	-	-	DNA binding
11271	KIAA0945	NM_014952.1	2545	ttgccccatgtctatgacttcc	29575	-	-	-
11272	KIAA1111	NM_015107.1	211	tggcctcgtgctccggtgtattgc	29576	-	see also 6248 line	
11273	KIAA1196	NM_020713.1	405	cagcatctacgggctcaagtacc	29633	-	transcription_regulat	-
11274	KIAA1259	NM_017553.1	4648	gggtacaacgtgtctaaaggaa	29740	-	-	-
11275	KIAA1333	NM_017769.2	958	atgtagggtattattctacaatt	29761	-	transcription_regulat	-
11276	KIAA1706	NM_030636.1	2210	cagtgtagtcggagttctacact	29813	-	-	-
11277	KIAA1750	NM_033512.1	916	aagggtactgagctacttaaac	29823	-	-	-
11278	KIAA1946	NM_177454.2	1971	cagattggagccgatactcaagc	29887	-	see also 10164 line	
11279	KIF22	NM_007317.1	99	tggctcgtctcgtggctaagaaga	29902	-	-	microtubule motor
11280	KLF15	NM_014079.2	462	gggggagcagcggcagtagcttgg	29923	-	transcription_regulat	translation regulator
11281	KLF16	NM_031918.1	41	acgtgctcattgcccattctctcg	29927	-	transcription_regulat	DNA binding
11282	KLF5	NM_001730.2	1005	ctgaatacacccggatctagatat	29944	-	transcription_regulat	translation regulator
11283	KLHL10	NM_152467.1	1518	tggatagtcgctgattgcttatg	29997	-	see also 9876 line	-
11284	KNSL7	NM_020242.1	3942	aagtcgaacgaaccacaaacttg	30109	-	see also 7817 line	-
11285	LAF4	NM_002285.1	2971	atgcctcgcagtcgcgattattt	30153	-	transcription_regulat	translation regulator
11286	LBR	NM_002296.2	1768	ttgttcgcaccccaattacttg	30216	-	see also 1473 line	-
11287	LCX	NM_030625.1	3877	tggctcaaacggaggtccattatg	30359	-	-	-
11288	LDB1	NM_003893.3	917	gggtgctacggagcgtactatg	30433	-	see also 2647 line	-
11289	LDB2	NM_001290.1	394	aggggtgaccgcacctgtattaca	30458	-	see also 849 line	-
11290	LEF1	NM_016269.2	979	tcgagttattccgggtacataat	30488	-	transcription_regulat	Lymphoid enhancer
11291	LHFP	NM_005780.1	712	gagtggtcggaggaattcagttt	30519	-	or,	binding factor 1
11292	LIG3	NM_002311.2	2174	aggcggcatgatgtcaatcttcc	30581	-	-	-
11293	LIG4	NM_002312.2	2712	tcgagccacacccgtttattgg	30687	-	see also 1480 line	-
11294	LIN28	NM_024674.3	607	cagagcatcagccatattgtagc	30704	-	see also 1484 line	-
						-	transcription_regulat	-

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11295	LOC11288 5	NM_138415.1	1388	ctggccatcgtgcactcttatgt	30709	-	transcription_regulat or	-
11296	LOC11595 0	NM_138783.1	1360	atgtcagccatcattctatgaat	30717	-	transcription_regulat or	-
11297	LOC11758	NM_057178.2	1019	gagagtgacccggctatatacagg	30727	-	see also 9500 line	-
11298	LOC15187	NM_138815.2	609	gagcttcacatgacatcttacc	30746	-	-	-
11299	LOC15322	NM_153607.1	1662	ctgagtggaaccgagatgactttg	30785	-	see also 9997 line	-
11300	LOC22114	NM_174928.1	180	aggcagagatgataataataaca	30809	-	-	-
11301	LOC28324	NM_173587.2	920	aagaccgcgacgcgaactagtgt	30833	-	-	-
11302	LOC56959	NM_020207.1	267	atgggcagcacatgacgtatttg	30844	-	-	-
11303	LOC57117	NM_020395.2	1318	ctggccttagtcgctcagttagt	30918	-	transcription_regulat or	-
11304	LOC58486	NM_021211.1	1343	ttgttcgttataggtttaataag	30961	-	-	-
11305	LOC64744	NM_022733.1	607	cagcgcctgtcatgattgttg	31024	-	see also 8436 line	-
11306	LOC90668	NM_138360.1	1082	cagaaacgcgcgcgaagattcg	31035	-	-	-
11307	LOC93349	NM_138402.2	593	gagaaagatctctacctaacc	31043	-	-	-
11308	LRP1B	NM_018557.1	5939	tggattgggtgtcacgtaatta	31211	-	see also 7512 line	-
11309	MAZ	NM_002383.1	761	gagttcaagaacggctacaatct	31550	-	transcription_regulat or	RNA polymerase II transcription factor
11310	MBD3	NM_003926.5	347	aagcagccggtgaccagattac	31558	-	see also 2687 line	-
11311	MBD5	NM_018328.3	4424	tagaccaaggacgttcaatttg	31679	-	-	-
11312	MCM2	NM_004526.2	103	cagcgtcggcggaggaatgatcc	31691	-	phosphatase, cell_cycle, transcription_regulat or	DNA dependent adenosinetriphosph atase
11313	MCM3	NM_002388.3	567	aagaccatagagcgaagtattc	31723	-	phosphatase, cell_cycle, transcription_regulat or	DNA dependent adenosinetriphosph atase
11314	MCM3AP	NM_003906.3	2217	gcgtggcatcacgggaaggatata	31802	-	phosphatase, transcription_regulat or	adenosinetriphosph atase
11315	MCM4	NM_005914.2	1834	tggcctcactcgtgacgtaatga	31873	-	-	-
11316	MCM6	NM_005915.4	2229	ctgagtgactgcggaatctctaac	31977	-	see also 4136 line	-
11317	MCM7	NM_005916.3	1248	gggaataatccctcgtagtata	32003	-	phosphatase, cell_cycle, transcription_regulat or	DNA dependent adenosinetriphosph atase
11318	MCM8	NM_032485.4	1050	gtggttcgtgctcagtaataaa	32047	-	phosphatase, cell_cycle, transcription_regulat or	-
11319	MCMDC1	NM_153255.2	240	atgaatagcgaatgaattacact	32100	-	phosphatase	-

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11320	MECP2	NM_004992.2	517	ctgggaagtatgatgtatttg	32150	-	see also 3482 line	-	
11321	MGC23143	NM_153219.1	656	ctgcggctgcgctttacagagg	32163	-	transcription_regulat	-	
11322	MGC23920	NM_173825.1	325	ttgcgtcgttgctgaattgaagc	32171	-	signal_transduction	-	
11323	MGC2941	NM_024297.1	242	cagagaacacggcggagacaatt	32182	-	transcription_regulat	-	
11324	MGC29463	NM_152686.1	925	ttgattatcacactagtgtgt	32202	-	see also 9917 line	-	
11325	MGC33407	NM_178525.2	193	cagtcaccaactggtgaacaagc	32207	-	-	-	
11326	MGMT	NM_002412.1	371	gtgatttttaccagcaattagc	32214	-	-	-	hepatocellular carcinoma(肝臓)、oral cavity cancers(口腔癌)、lung cancer(肺癌)、ovarian cancer(原発性卵巣癌)、GNS Tumours(中枢神経腫瘍)
11327	MHC2TA	NM_000246.1	1366	ccgcgtgagacacagagtgattgc	32223	-	-	-	methyated-DNA-[protein]-cysteine S-methyltransferase
11328	MT-ER1	NM_020948.1	749	ccgcacacgtgatgttaatt	32246	-	transcription_regulat	-	hematopoietic-associated factor 1A complex
11329	MITF	NM_000248.2	345	tggctatgcttgcgttaactcc	32279	-	see also 180 line	-	
11330	MKL1	NM_020831.2	1673	gagcgcttcgagcctatcaaga	32380	-	transcription_regulat	-	
11331	MLL3	NM_021230.1	10745	aagattgcaggcgcgtcaataaa	32628	-	transcription_regulat	-	
11332	MLL5	NM_018682.2	3593	ctggttcggacggagctgttaat	32803	-	transcription_regulat	-	
11333	MLLT1	NM_005934.2	391	cgggttacgctgcgttcacatg	32863	-	transcription_regulat	-	
11334	MLLT6	NM_005937.1	1650	aggcatctacaccagtaataagg	32878	-	see also 4144 line	-	leukemia(白血病)
11335	MNDA	NM_002432.1	990	aagtcattaccatctctgatta	32901	-	transcription_regulat	-	
11336	MRTF-B	NM_014048.3	3074	aggtatcctggaccattcacact	32971	-	transcription_regulat	-	
11337	MUS81	NM_025128.3	387	ccgcacgcgcttcgtatttcaga	32974	-	-	-	
11338	MUTYH	NM_012222.1	428	aagctggtacgacaaagagaac	32991	-	-	-	
11339	MXI1	NM_005962.2	963	gtgccagtgtaacaatttcattc	33015	-	transcription_regulat	-	prostate cancer(前立腺癌)、astrocytic tumors(星状腫瘍)
11340	MYB	NM_005375.1	829	ctgttaacaacgactatttcctat	33030	-	transcription_regulat	-	
11341	MYCD	NM_153604.1	219	cagtcgcgacttggttaattgc	33073	-	see also 9996 line	-	transcription factor liposarcoma(脂肪肉腫)、melanoma(メラノーマ)
11342	MYST3	NM_006766.1	1378	cggcgctataactaatccaatagg	33140	-	transcription_regulat	-	
11343	MYST4	NM_012330.1	6173	agggtcctgcacggactttaacg	33359	-	-	-	DNA binding
11344	N-PAC	NM_032569.2	335	atgacaagaatcaggaatttc	33387	-	see also 5283 line	-	
11345	NAP1L1	NM_004537.3	680	caggaacacgtaggaactttct	33411	-	see also 9250 line	-	
11346	NAP1L2	NM_021963.2	1420	ggggaacaatccgaactgtaact	33445	-	see also 3090 line	-	
11347	NAP1L3	NM_004538.2	474	ccgcagccggtgtatagaaga	33457	-	see also 3094 line	-	



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11348	NAP1L4	NM_005969.2	361	caggtgagatgtgtctcacataga	33500	-	-	chaperone	-
11349	NCL	NM_005381.1	1358	ctcggagatcagattatcagc	33534	-	-	RNA binding	-
11350	NCOR1	NM_006311.2	4356	gagcacacggccgataattgagg	33632	-	see also 4410 line	-	-
11351	NCOR2	NM_006312.1	860	aggaatcaagctcggaaacaatg	33700	-	transcription_regulat	transcription co-repressor	-
11352	NDN	NM_002487.2	466	atgtcatcggcagctacaagaag	33733	-	cell cycle,	-	-
11353	NEUROD1	NM_002500.1	1088	gagatcccatagacaattattat	33744	-	transcription_regulat	DNA binding	-
11354	NEUROD4	NM_021191.1	721	aagctcgccttgagagattcagg	33752	-	see also 1606 line	-	-
11355	NEUROG3	NM_020999.1	424	acgaccgcggagcgcaatcgatg	33799	-	transcription_regulat	transcription regulator	-
11356	NIRF	NM_152306.2	1638	ttggtcgtacgagagaatgtact	33847	-	transcription_regulat	transcription regulator	-
11357	NONO	NM_007363.3	1343	gtgctatgggcataaacaacaga	33889	-	see also 9835 line	pre-mRNA splicing factor	renal cell carcinoma(腎細胞癌)
11358	NRBF-2	NM_030759.1	224	cagacgagcagacacgctttattag	33890	-	-	receptor_activity,	-
11359	NRF	NM_017544.1	1552	ttggcgtgtcctctatgaattt	33930	-	transcription_regulat	transcription_regulat	-
11360	NRF1	NM_005011.2	856	caggcactacagggaccatagttaa	33959	-	transcription_regulat	nucleic acid binding	-
11361	NRL	NM_006177.1	744	ccggagagcggatctctacaagg	33970	-	transcription_regulat	factor-1	-
11362	NTHL1	NM_002528.4	836	gagctgtgcacgagatcaatgg	34178	-	transcription_regulat	specific RNA polymerase II	-
11363	NUCB1	NM_006184.3	899	ggcgtatcgaggagcatgtatga	34186	-	-	transcription factor	-
11364	NUCB2	NM_005013.1	730	aagactcgtcatgaagaatttaa	34205	-	-	calcium ion binding	-
11365	NUP153	NM_005124.2	2050	tcgcatcgcgcgaagatagattct	34282	-	see also 3509 line	-	-
11366	OASL	NM_003733.2	1233	cagatgtcctcttagccaaatag	34348	-	see also 3601 line	-	-
11367	ORC1L	NM_004153.2	644	atgtgtacacgacgaatctgaaa	34368	-	-	transferase	-
11368	OSMR	NM_003999.1	1346	ctgactcatcagagttttattaat	34457	-	-	E2F-4/DP-1 complex	-
11369	PAX1	NM_006192.1	411	cggaccgtacaggcgaagttagc	34504	-	receptor_activity,	-	-
11370	PAX5	NM_016734.1	1545	ttggctccccctactattatagc	34521	-	signal transduction	-	-
11371	PAX9	NM_006194.1	801	agggctattacgactcacaagaag	34523	-	see also 4280 line	transcription_regulat	bladder transitional cell carcinoma(膀胱移行上皮癌), medulloblastoma(髓芽腫)
11372	PC326	NM_018442.1	911	caggctaatcgcacatcatctcc	34539	-	transcription_regulat	DNA binding	-
11373	PCBP3	NM_020528.1	790	caggtgtcagccctacacaatc	34578	-	-	DNA binding	-
11374	PCDH1	NM_002587.3	973	gaggccgaactatctgagaatag	34595	-	see also 7889 line	-	-
						-	transcription_regulat	-	-

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11375	PONA	NM_002592.2	526	oggtacacttgccgctagtattt	34625	-	cell_cycle	-	laryngeal cancer(喉頭癌)、non-hodgkin lymphoma(非ホジキンリンパ腫)、breast cancer(乳癌)、ocular melanoma(眼メラノーマ)、skin cancer(皮膚癌)、Hodgkin's disease(ホジキン病)
11376	PDCD2	NM_002598.2	603	cagatcatctgaccataatt	34643	-	apoptosis	-	zinc binding
11377	PHF11	NM_016119.1	152	ctgcccacaaagatgtogaata	34679	-	transcription_regulat	-	-
11378	PHF12	NM_020889.1	1187	gagcggaacccaccccaattca	34701	-	see also 8012 line	-	-
11379	PHF13	NM_153812.1	841	gagtcacacottcagagatatcc	34740	-	transcription_regulat	-	-
11380	PHF14	NM_014660.1	2165	gggagacagtagacagatatcttc	34789	-	see also 5831 line	-	-
11381	PHF15	NM_015288.4	1441	aggcaactgtgacattcatctac	34822	-	see also 6314 line	-	-
11382	PHF16	NM_014735.2	2174	ccgtctcgcggagtgctatcatgg	34870	-	see also 5924 line	-	-
11383	PHF3	NM_015153.1	627	cagccgaaatagcggacaaattg	34897	-	transcription_regulat	-	-
11384	PHF6	NM_032335.1	712	atggaaagtagttctctatagaga	35048	-	see also 9165 line	-	-
11385	PIAS3	NM_006099.2	838	ctgagttcggacgggaattactcc	35134	-	transcription_regulat	-	-
11386	PIAS3	NM_015897.2	308	ccgctggcagggccccaattga	35155	-	transcription_regulat	-	-
11387	PIK4CA	NM_002650.1	1371	gggctatgtgcggagagatatctc	35180	-	kinase_related	-	-
11388	PJA2	NM_014819.1	815	tagattctgtaccatttagtaaa	35275	-	signal_transduction	-	-
11389	PLAC3	NM_020318.1	1598	acgttatctcggcaatcaaga	35317	-	see also 6012 line	-	-
11390	PLAGL1	NM_002656.2	2876	ctgcagatgctgtgaacctaaaca	35404	-	cell_cycle、apoptosis、transcription_regulat	-	-
11391	PMS1	NM_000534.2	2724	gtgcgtctatccagacaattacc	35502	-	see also 404 line	-	-
11392	PMS2	NM_000535.2	608	cagcagcagcatcgtgtaagtgc	35507	-	-	-	colorectal cancer(結腸直腸癌)、colorectal carcinoma(大腸癌)、ataxia telangiectasia(毛細血管拡張性運動失調症)、Turcot syndrome with glioblastoma(膠芽細胞腫に伴うターコット症候群)、cerebral astrocytoma(大脳星状細胞腫)、colorectal cancers(結腸直腸癌)、familial nervous system tumor syndromes(家族性神経系腫瘍)
11393	POGK	NM_017542.3	1778	tcgcgtggaatagcagatctcaagt	35547	-	see also 7022 line	-	-
11394	POGZ	NM_015100.1	387	acggtagaccattacactagt	35561	-	see also 6238 line	-	-
11395	POLA	NM_016937.1	3943	tgcagtaacatcagattgtaagg	35715	-	see also 6972 line	-	-
11396	POLB	NM_002690.1	172	cagaactcgaacactttgagaag	35731	-	see also 1752 line	-	-
11397	POLD1	NM_002691.1	2216	ggggttcggaagcagatgatag	35766	-	-	-	zeta DNA polymerase
11398	POLD3	NM_006591.1	973	agggggaagcggagtagcattatc	35787	-	see also 4617 line	-	-

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11399	POLE2	NM_002692.2	758	tagtactactaggcactactatg	35904	-	-	zeta DNA polymerase	-
11400	POLE3	NM_017443.3	398	tggagttccagcgggttcgtatc	35932	-	-	-	-
11401	POLE4	NM_019896.2	320	gagagacttggaataatgaatag	35935	-	-	-	-
11402	POLG	NM_002693.1	2685	gaggaacgcccataaacgataca	35960	-	see also 1754 line	-	-
11403	POLL	NM_013274.2	1518	cagtactctctggaacgtatgc	35980	-	-	zeta DNA polymerase	-
11404	POLM	NM_013284.1	816	aggactgcgaaccttagatgacc	35988	-	-	zeta DNA polymerase	-
11405	POLR1A	NM_015425.1	207	cggcaaacggcctgtacgattta	36000	-	see also 6408 line	-	-
11406	POLR1B	NM_019014.2	3352	gttagtgcagagtgacactatcg	36171	-	-	-	-
11407	POLR1C	NM_004875.1	787	gtgcttctcacctgggtgttttg	36192	-	transcription_regulat	-	-
11408	POLR2A	NM_000937.2	2695	tctgttcggagcctaaggttcc	36233	-	transcription_regulat	DNA-directed RNA polymerase III	-
11409	POLR2B	NM_000938.1	3538	gagttatgcaccgcggaatgaga	36404	-	see also 616 line	-	-
11410	POLR2C	NM_002694.2	139	ctggcgttgcccaattcgattcg	36407	-	transcription_regulat	-	-
11411	POLR2F	NM_021974.2	105	tggcgcagactttgatgatgtgg	36427	-	-	DNA-directed RNA polymerase III	-
11412	POLR2K	NM_005034.2	182	gtggatcacagaataatgtacaag	36435	-	transcription_regulat	zinc binding	-
11413	POLRMT	NM_005035.2	1843	ccgtgctctaccacgctgattcc	36439	-	transcription_regulat	DNA-directed RNA polymerase III	-
11414	POLS	NM_006999.2	995	gagcgaatgacacatgcaatgg	36466	-	see also 4887 line	-	-
11415	PPARBP	NM_004774.2	489	atgttacatcacgtcagatatgt	36486	-	see also 3284 line	-	-
11416	PPARGC1	NM_013261.2	1692	ttggatggcgcgcaatcctatt	36628	-	see also 5378 line	-	-
11417	PPFIBP1	NM_003622.2	417	gagcagatggatgggtatcatagc	36644	-	-	-	-
11418	PQBP1	NM_005710.1	867	atggaacctagctcactactcaga	36728	-	transcription_regulat	-	mental retardation(精神遅滞)
11419	PRDM10	NM_020228.1	1031	atgaatgttaaccgcgcgattata	36743	-	transcription_regulat	DNA binding	-
11420	PRDM12	NM_021619.2	489	tggcacgggtgcgctacttcatcg	36781	-	transcription_regulat	-	-
11421	PRDM13	NM_021620.1	2029	aagctgtactcgccgaagatgg	36795	-	transcription_regulat	DNA binding	-
11422	PRDM14	NM_024504.1	1079	gtgaagacctacggagacaattc	36806	-	transcription_regulat	DNA binding	-
11423	PRDM4	NM_012406.2	1137	gggacagggtcatgtagatgtatc	36844	-	transcription_regulat	zinc binding	-
11424	PRDM5	NM_018699.1	336	ctggcttcgcttcgttcattgagg	36872	-	see also 7569 line	-	-
11425	PREB	NM_013388.3	662	gtgtcttcaaccacgataataac	36921	-	transcription_regulat	translational regulator	-
11426	PRIM2A	NM_000947.1	620	tgggggtcagttcatttataag	36946	-	see also 629 line	-	-

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11427	PRKCBP1	NM_012408.3	1024	caggatgatgcccgattctttgg	36993	-	transcription_regulat	-	-
11428	PRKRI	NM_004705.2	1969	gagcttcctgcaccattctatga	37082	-	see also 3228 line	-	-
11429	PTPRF	NM_002840.2	3438	aggttcocgactctataagfca	37154	-	receptor activity, phosphatase, signal_transduction	-	small cell lung cancer(肺癌)
11430	PYGO1	NM_015617.1	1204	cagttaatgcgtactagagaaac	37217	-	transcription_regulat	-	-
11431	PYGO2	NM_138300.2	265	gggcaaggccggctctgcaaatga	37219	-	transcription_regulat	-	-
11432	RAB10	NM_016131.2	745	cagaggcgcaatgggtatcatgc	37230	-	see also 6684 line	-	-
11433	RAB25	NM_020387.1	926	ttgcctttgggtccagatatca	37252	-	signal_transduction	protein transporter	-
11434	RABGEF1	NM_014504.1	1286	ttgcttagggcgtcaagcaaatgt	37272	-	-	-	-
11435	RAD17	NM_002873.1	1214	gagcgacaagatatacaagtta	37304	-	see also 1910 line	-	-
11436	RAD52	NM_002879.2	310	gagggtcatcgggttaataatct	37341	-	see also 1919 line	-	-
11437	RAD54B	NM_012415.2	2139	aagcgtcatggatgctctttac	37419	-	-	-	-
11438	RAD54L	NM_003579.2	2260	ccgtgcccggaggtacttatcgc	37475	-	see also 2374 line	-	-
11439	RAG1	NM_000448.1	2411	tggcgttccaaacccttaccatga	37534	-	endonuclease	severe combined immunodeficiency disease(重症複合型免疫不全症)	-
11440	RAG2	NM_000536.1	728	tgggtgtgctacatcatcatt	37565	-	endonuclease	severe combined immunodeficiency disease(重症複合型免疫不全症)	-
11441	RAI1	NM_030665.3	6118	cagcgatgcaggttgcatattca	37631	-	transcription_regulat	-	schizophrenia(精神分裂病)
11442	RBL2	NM_005611.2	2797	cagaacattatcggtttgatag	37718	-	see also 3898 line	-	-
11443	RBM5	NM_005778.1	279	atgatcgagggtggtgatagat	37737	-	see also 4039 line	-	-
11444	RBM6	NM_005777.1	519	aaggaccacctatggactatagg	37795	-	see also 4031 line	-	-
11445	RBPSUH	NM_005349.1	1410	aggtgcccctaacgaatcaaac	37890	-	see also 3734 line	-	-
11446	RBPSUHL	NM_014276.2	473	ctgagacgcgagagctgaatttc	37905	-	-	-	-
11447	RECQL	NM_002907.2	2156	cagcttatgctaccatttgtat	37991	-	-	-	-
11448	REPIN1	NM_013400.1	936	cgggaagcgtttaccataaagc	37998	-	-	-	-
11449	REV3L	NM_002912.1	8827	gaggttggcgatagattgttca	38249	-	see also 1946 line	-	-
11450	RFC1	NM_002913.3	1273	aagcttatcggaagctactaaat	38338	-	see also 1958 line	-	-
11451	RFC2	NM_002914.3	477	gtgcactctcgggtacacaaag	38404	-	-	-	Williams-Beuren syndrome(ウィリアムズ症候群)
11452	RFC3	NM_002915.2	120	tgggacggcgtggactatcacaaag	38420	-	-	-	-
11453	RFC4	NM_002916.3	896	gagggaaatagcttatctgttaa	38464	-	see also 1963 line	-	-
11454	RFC5	NM_007370.3	941	aggggtggacactgatgatc	38487	-	-	-	-
11455	RFP	NM_006510.3	978	tagactggccatctacaatagc	38498	-	kinase related, transcription_regulat	-	-
11456	RFX2	NM_000635.2	1287	ctgcgaggcaactgttagatgtgg	38509	-	transcription_regulat	-	-
11457	RFX4	NM_002920.3	1090	ctgagacggcaaacatcactaaa	38535	-	transcription_regulat	-	-
11458	RFXDC1	NM_173560.1	1568	ttggtgctcgagtaatgcataat	38598	-	see also 10083 line	-	-

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11459	RPC155	NM_007055.2	253	tggaggtgctgcaccataggatgg	38641	-	see also 4940 line	transcription_regulat	translation	-
11460	RREB1	NM_002955.3	1727	ctgagcctgtcacctttcgaagc	38758	-	or,	regulator	-	-
11461	RUNX3	NM_004350.1	377	atgcctcgccgcgtcatgaagaac	38775	-	transcription_regulat	transcription factor	gastric cancer(胃癌)	-
11462	SAFB2	NM_014649.1	1290	acgcgctacggatctcaagaacc	38788	-	or	-	-	-
11463	SALL1	NM_002968.1	555	gggcaacttcctcgttaatacaaca	38817	-	see also 1999 line	-	-	-
11464	SALL3	NM_171999.1	3852	ccgcocattcacgcggtttatcg	38872	-	transcription_regulat	DNA binding	-	-
11465	SALL4	NM_020436.2	275	gagcgcgcacgtctgtgagaaatg	38878	-	see also 7875 line	-	-	-
11466	SCOTIN	NM_016479.3	281	tggtagctgtgatgaccaatct	38917	-	kinase_related	-	-	-
11467	SE20-4	NM_022117.1	374	gggggatccgcgcatacttccacg	38921	-	see also 8281 line	-	-	-
11468	SETBP1	NM_015559.1	1034	aagtcattgctcggattactatcc	38973	-	transcription_regulat	-	-	-
11469	SETDB1	NM_012432.1	2845	cagtggtggcggagctatgctacc	39079	-	or	-	-	-
11470	SETDB2	NM_031915.1	1379	cagcactccacgctgagtataaa	39120	-	see also 5321 line	-	-	-
11471	SFPQ	NM_005066.1	1533	atggcacggtttgagtagcaaatat	39201	-	see also 3531 line	-	-	-
11472	SHPRH	NM_173082.1	1560	ctgacacatactcgacaagaatgt	39254	-	see also 10050 line	-	-	-
11473	SIRT1	NM_012238.3	588	aggccacggataggtccatatac	39380	-	see also 5214 line	-	-	-
11474	SIRT2	NM_012237.2	312	atggaacttctcgggaacttatt	39445	-	cell_cycle,	transcription_regulat	-	-
11475	SIRT3	NM_012239.3	964	aagccgacattgtgtcttgg	39465	-	or	-	-	-
11476	SIRT4	NM_012240.1	667	aggctcccaacctgcgttcaatgt	39478	-	transcription_regulat	-	-	-
11477	SIRT5	NM_012241.2	313	ttgtcccaagtcgattgatttcc	39481	-	or	transcription_regulat	-	-
11478	SIRT6	NM_016539.1	426	aggcttcccccagggaacaaactgg	39495	-	transcription_regulat	-	-	-
11479	SLK	NM_014720.1	3446	gagctcgaagaacgacacttaca	39571	-	see also 5913 line	-	-	-
11480	SMAP1	NM_021940.2	1327	tggctggcatgagtagtcagtagt	39614	-	see also 8204 line	-	-	-
11481	SMARCA1	NM_003069.2	1007	tggcgatacctggtcaattgatga	39647	-	see also 2053 line	-	-	-
11482	SMARCA2	NM_003070.2	2423	ttgttcccttgcactctatct	39737	-	transcription_regulat	-	-	-
11483	SMARCA3	NM_003071.2	2319	ttgttagactggcgcaatttg	39841	-	or	transcription_regulat	-	-
11484	SMARCA5	NM_003601.2	1956	aggttcacgagtagtaatacttca	39905	-	transcription_regulat	-	-	-
11485	SMARCA5	NM_020159.1	1924	ctgtttcagcggctgaacttaa	39999	-	or	transcription_regulat	-	-
11486	SMARCA1	NM_014140.2	856	tgggtacaatcggaactcattg	40062	-	see also 5513 line	-	-	-
11487	SMARCF1	NM_006015.3	6552	tggttacactcgccaacatctcg	40169	-	see also 4188 line	-	-	-
11488	SMCY	NM_004653.2	741	ctgctacgatacacattacgaacg	40209	-	transcription_regulat	molecular_function	unknown	-

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11489	SMYD1	NM_198274.1	628	tgcccaactgtactgtcatatt	40243	-	-	-	-	-	-	-
11490	SNAI1	NM_005985.2	131	gagctcaggaactcttaacaga	40262	-	-	-	-	-	-	-
11491	SNAI2	NM_003068.3	587	tgagctggccaacaataagcagc	40270	-	-	-	-	-	-	-
11492	SNAPC3	NM_003084.1	313	ggcggtgtggcccttgataaa	40274	-	-	-	-	-	-	-
11493	SNX7	NM_015976.2	580	atggtggaacgcttaacgatga	40312	-	-	-	-	-	-	-
11494	SON	NM_003103.5	4747	aggaactagtaagggtattgaat	40425	-	-	-	-	-	-	-
11495	SOS1	NM_005633.2	1829	tagagaggcttaacgtacatgat	40519	-	-	-	-	-	-	-
11496	SOX10	NM_006941.3	1642	gggagcagccagctatatacgaca	40573	-	-	-	-	-	-	-
11497	SOX11	NM_003108.3	1229	ctgtcctgtggataaggattt	40577	-	-	-	-	-	-	-
11498	SOX15	NM_006942.1	1133	tggtctctccactccatacaacc	40580	-	-	-	-	-	-	-
11499	SOX17	NM_022454.2	1074	cagcgcccttcaagtgactacg	40581	-	-	-	-	-	-	-
11500	SOX18	NM_018419.2	1222	acgcagcagcgcggctctattac	40590	-	-	-	-	-	-	-
11501	SOX3	NM_005634.2	945	cggcgctcagagctacatgaacg	40593	-	-	-	-	-	-	-
11502	SOX30	NM_007017.2	1616	ctggtaccacacagaatcatc	40610	-	-	-	-	-	-	-
11503	SOX9	NM_000346.2	537	ggcgagccgagctgaagaagg	40640	-	-	-	-	-	-	-
11504	SP1	NM_138473.2	1745	ctgccgttggtctagacaaatgc	40671	-	-	-	-	-	-	-
11505	SP100	NM_003113.2	1147	ttgctcacgacccagattgtac	40697	-	-	-	-	-	-	-
11506	SP110	NM_004509.2	837	ttgggctctatgccagagataag	40725	-	-	-	-	-	-	-
11507	SP2	NM_003110.3	1538	gagcgccctgcgcaagatgc	40754	-	-	-	-	-	-	-
11508	SP3	NM_003111.1	1179	ttgctgttacgatatagtagtac	40767	-	-	-	-	-	-	-
11509	SP7	NM_152860.1	777	ttgcccacaagatgtctataaacc	40833	-	-	-	-	-	-	-
11510	SP8	NM_182700.2	143	atgcttgccgctaccctgaataa	40835	-	-	-	-	-	-	-
11511	SPATA13	NM_153023.1	1756	tagaccgaagctcagaattgatt	40855	-	-	-	-	-	-	-
11512	SPG3A	NM_015915.2	1087	tagtccgagagcctagatatta	40891	-	-	-	-	-	-	-
11513	SPO11	NM_012444.2	536	ctgtcgtgacaattattcaat	40928	-	-	-	-	-	-	-
11514	SRCAP	NM_006662.1	6671	ctgtcatatccgcccatcaaat	41032	-	-	-	-	-	-	-
11515	SREBF2	NM_004599.2	1159	aaggcagacaaccataatca	41059	-	-	-	-	-	-	-
11516	SRISNF2L	NM_015106.1	2092	gaggagcgcgcttattaatcagt	41142	-	-	-	-	-	-	-
11517	SRY	NM_003140.1	165	ctgtctatgtaagcgtattcaac	41177	-	-	-	-	-	-	-
11518	SSA1	NM_003141.2	632	taggattcacgcagagttgtgc	41197	-	-	-	-	-	-	-

Waardenburg-Hirschsprung disease(ワールデン  
ブルグ ヒルシュ病)

mental retardation(精神遅滞)

gonadal dysgenesis(性器发育異常症), prostate  
cancer(前立腺癌), sex reversal with partial  
ovarian function(子宮の部分的機能の性転換)  
Sjogren syndrome(シェーグレン症候群),  
systemic lupus erythematosus(全身性エリテマ)

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11519	SSRP1	NM_003146.2	1403	ttgctcgtggtaccactactact	41226	-	see also 2127 line	transcription_regulat	-	
11520	SUHW2	NM_080764.2	1273	atgaagtcctcgtgtatacaag	41257	-	or	-	-	
11521	SYCP1	NM_003176.2	3066	gaggaacgcttggtgctgtattgc	41322	-	-	DNA binding	-	
11522	SYCP2	NM_014258.2	2832	gtcggataggtcaattagattg	41408	-	-	-	-	
11523	TAF1	NM_004606.2	5574	cggtaggtatgaggatcagagg	41477	-	-	transcription_regulat	-	
11524	TAF11	NM_005643.2	651	aagcgttagaaggtaaagtca	41494	-	see also 3916 line	or, kinase_related,	-	
11525	TAF12	NM_005644.2	249	aagctccatggccaatagtact	41497	-	see also 3917 line	cell_cycle	-	
11526	TAF6	NM_005641.2	748	ttgactacgcttgaagctaaag	41513	-	transcription_regulat	-	-	
11527	TAF6L	NM_006473.2	757	tggcaaggagcctatttctgaat	41555	-	or	-	-	
11528	TAF9L	NM_015975.3	536	gtgctgttagtagcaaacctact	41585	-	transcription_regulat	-	-	
11529	TAL1	NM_003189.1	1131	aagttgtgggggtatcttcacc	41589	-	or	transcription_regulat	translation regulator	lymphoma(リンパ腫)、leukemia(白血病)
11530	TAL2	NM_005421.1	267	cagaactctgcttgagaactacc	41590	-	or	transcription_regulat	protein binding	leukemia(白血病)
11531	TBP	NM_003194.2	789	gtgccgaagacgcgaataata	41598	-	transcription_regulat	TFIID complex	-	
11532	TBPL1	NM_004865.2	691	cagttacgaacctgaacttcatc	41623	-	see also 3383 line	-	-	
11533	TBRG1	NM_032811.1	536	cagctctgtgggaactatatacagg	41630	-	-	-	-	
11534	TCF12	NM_003205.2	1942	gagagcgggtagctcaacaatgc	41687	-	see also 2171 line	-	-	
11535	TCF20	NM_005650.1	2240	tggaaagtgcgcgtatagtta	41731	-	see also 3919 line	-	-	
11536	TCF21	NM_003206.2	761	gtgaccgcgagcgcgttatgtgg	41817	-	transcription_regulat	RNA polymerase II	transcription factor	-
11537	TCF4	NM_003199.1	2170	gggagagcgcgcgaatcaatgg	41851	-	or	see also 2161 line	-	
11538	TCF7	NM_003202.1	303	ctgaacctctggtcttactcc	41855	-	transcription_regulat	T-cell factor 1G	-	
11539	TCFL1	NM_005997.1	668	gggocccataatcacctatcttc	41865	-	or	transcription_regulat	RNA polymerase II	-
11540	THAP11	NM_020457.2	265	gcgtgcagcgtctctacaacaac	41910	-	-	-	-	
11541	THAP6	NM_144721.2	498	tcggcgagctagaggtacacaag	41929	-	-	-	-	
11542	THAP7	NM_030573.1	342	cggcatctcgggtacatctcttc	41937	-	see also 8890 line	-	-	
11543	TIAL1	NM_003252.2	820	tcggtagacggtactacgattga	41961	-	see also 2195 line	-	-	
11544	TIF1	NM_003852.2	1822	tgggtcacctatcatcgattg	42006	-	see also 2616 line	-	-	
11545	TIGD4	NM_145720.2	1560	atgacctccgatgtattgaaca	42086	-	-	-	-	
11546	TIGD5	NM_032862.2	180	gggocactcagcgaagaagatgc	42105	-	-	-	-	
11547	TIGD6	NM_030953.2	645	gagatgccacgaattgctttg	42124	-	-	-	-	
11548	TIGD7	NM_033208.2	1645	ggagacgtcaggcattgttact	42182	-	-	-	-	
11549	TIMELESS	NM_003920.1	2690	tggccaccctgaatactgttcc	42253	-	see also 2682 line	-	-	
11550	TMF1	NM_007114.1	131	atggagagcggggaataagttcc	42267	-	transcription_regulat	transcription cofactor	-	

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11551	TMX2	NM_015959.1	106	atggtcgcgcccaacttactacc	42353	-	-	-	-
11552	TNFAIP3	NM_006290.2	1015	tggacacatggcacaactcatct	42391	-	see also 4384 line	-	-
11553	TNP1	NM_003284.2	30	atgtgaccagcgcgcaataaaa	42402	-	transcription_regulat or	DNA binding	-
11554	TNXB	NM_015105.4	11684	ggcgagacagcttcaagctctcc	42440	-	see also 7710 line	-	-
11555	TOP1MT	NM_052963.1	1160	aagccggtgtacaagaactaca	42501	-	-	DNA topoisomerase I	-
11556	TOP2A	NM_001067.2	2525	ctgtatgtccacgatacatcttt	42581	-	see also 653 line	-	-
11557	TOP2B	NM_001068.2	1011	aggtggacggcagcgtggattatg	42675	-	see also 656 line	-	-
11558	TOP3A	NM_004618.2	746	gtgttgcgagcccgattctctga	42780	-	see also 3135 line	-	-
11559	TOP3B	NM_003935.3	2066	tgtgtcacggctactataagatt	42843	-	-	DNA topoisomerase I	-
11560	TOX	NM_014729.1	897	aagcgatgatcacctctaagatc	42863	-	see also 5919 line	-	-
11561	TRERF1	NM_018415.1	3313	gtgggtactgttgggttaagagc	42907	-	see also 7454 line	-	-
11562	TRIM26	NM_003449.2	974	aggacacagagagacttcttaaac	42920	-	-	zinc binding	-
11563	TRIM33	NM_015906.2	3158	tggccgatgtccgtttgatcttc	43004	-	transcription_regulat or	-	thyroid carcinoma(甲状腺癌)
11564	TRPV6	NM_018646.2	1599	ctgtgtcaacgtcatgtactctcg	43020	-	-	receptor_activity、 channel	-
11565	TSG101	NM_006292.2	943	atggttacccgtttgataaaga	43049	-	see also 4386 line	-	-
11566	TSN	NM_004622.2	812	aagcgctacgacggattgaata	43072	-	-	DNA binding	-
11567	TSNAX	NM_005999.2	501	cagttcatctcggccattactac	43088	-	see also 4185 line	-	-
11568	TSPYL3	NM_178465.1	625	atgataagccctcgagatgaaga	43115	-	-	-	-
11569	TSPYL4	NM_021648.3	182	atgcagcgagaagtttcoattat	43118	-	-	-	-
11570	TTF2	NM_003594.3	1758	tgtttactatggcagaaagtca	43150	-	transcription_regulat or、phosphatase	-	-
11571	UBTF	NM_014233.1	2065	caggaccgtgcagcatataaaga	43212	-	see also 5550 line	-	-
11572	UPLC1	NM_017707.2	273	ccgagagccgtgggaatccttag	43218	-	-	-	-
11573	USF1	NM_007122.2	449	cagctgtcgtgagcgcactatact	43236	-	see also 4956 line	-	-
11574	VAT1	NM_006373.2	556	ctgccttgcgtcoattacatt	43254	-	-	zinc binding	-
11575	WBCSR14	NM_032951.1	2582	agggcacccttggcaaaccttta	43272	-	transcription_regulat or	-	-
11576	WDHD1	NM_007086.1	894	tgtcgaatatcgtatactatgatg	43302	-	see also 4947 line	-	-
11577	WDT01	NM_015023.2	1130	cggtagcagcccgattactacgtag	43397	-	see also 6189 line	-	-
11578	WHSC1	NM_007331.1	2262	ctgtctgatgcataaaaccact	43448	-	transcription_regulat or	-	Wolf-Hirschhorn syndrome(Wolf-Hirschhorn症候 群)
11579	WHSC1L1	NM_017778.2	1494	cgggtacgagagataaaggctca	43519	-	transcription_regulat or	-	-
11580	WRN	NM_000553.2	1826	atggaccacaacacttgatcatt	43646	-	-	DNA helicase	-
11581	WRNIP1	NM_020135.2	1298	gagccgtgtcgtgagtgatttc	43754	-	-	-	-
11582	YBX2	NM_015982.1	369	atggttcaggatcatcaacag	43774	-	-	-	-
11583	ZBED3	NM_032367.1	918	gggacggctgcgtcatcacaaag	43778	-	-	-	-
11584	ZBED4	NM_014838.1	1087	ccgtcccccgcgatgaataacaga	43793	-	-	DNA binding	-



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11585	ZBTB2	NM_020861.1	215	cggttcaatcaggcgtatgtatc	43831	-	transcription_regulat	-	-
11586	ZBTB3	NM_024784.2	781	cagatgagccaccaatgtctagt	43873	-	see also 8746 line	-	-
11587	ZF	NM_021212.1	498	cggaggatagacattctgtct	43884	-	transcription_regulat	-	-
11588	ZFD25	NM_016220.2	2395	cagttctatcttctaataaca	43891	-	transcription_regulat	molecular_function	-
11589	ZFP161	NM_003409.2	695	aagttcggaagtcattgtctac	43912	-	transcription_regulat	protein binding	-
11590	ZFP28	NM_020828.1	219	aggaaatggcctcgcatccaaaagg	43922	-	transcription_regulat	-	-
11591	ZFP36	NM_003407.1	999	cggcgactccccctcttcaatcg	43954	-	-	-	-
11592	ZFP64	NM_018197.2	827	aaggacatggaggcggaatttaaa	43964	-	see also 7313 line	DNA binding	rheumatoid arthritis(関節リウマチ)
11593	ZFX	NM_003410.1	769	ctgactaccgacgtagtttcaga	43987	-	transcription_regulat	translation	-
11594	ZFY	NM_003411.2	2320	atgtggctgtccacaaaggtaaa	43999	-	transcription_regulat	regulator	-
11595	ZIC2	NM_007129.2	1280	ccgcagctcggctatgagtag	44003	-	transcription_regulat	translation	-
11596	ZIC3	NM_003413.2	1141	cggcgctcagttctctaactaca	44004	-	-	DNA binding	holoprosencephaly(全前脳胞症)
11597	ZIC4	NM_032153.2	907	gggaaggtcttcttagatcaga	44018	-	-	-	-
11598	ZIC5	NM_033132.2	2219	aagttgctggcgacataatag	44034	-	see also 9376 line	-	-
11599	ZIM3	NM_052882.1	739	tagaatgtgacggatctaaagaaa	44037	-	-	DNA binding	-
11600	ZNF10	NM_015394.4	1833	atgtggagacagcgctgtgtaata	44090	-	transcription_regulat	DNA binding	-
11601	ZNF124	NM_003431.1	1329	tcgtgctagtagcccttgaagc	44108	-	transcription_regulat	transcription factor	-
11602	ZNF136	NM_003437.2	970	ttgttcccaaaccttaacgaatac	44120	-	transcription_regulat	transcription co-repressor	-
11603	ZNF14	NM_021030.2	1114	aagcttgcagacacatgtaataa	44136	-	transcription_regulat	DNA binding	-
11604	ZNF141	NM_003441.1	1379	cagatcggagtcacacataagaaa	44145	-	transcription_regulat	specific RNA polymerase II	-
11605	ZNF143	NM_003442.3	1119	gcgtcgggtcctttacaacatca	44177	-	transcription_regulat	transcription factor	-
11606	ZNF146	NM_007145.1	1439	cagcgaacatcacatttgttaca	44209	-	transcription_regulat	translation	-
11607	ZNF151	NM_003443.1	1989	tggcttcaaccgggtagacaacc	44285	-	transcription_regulat	regulator	-
11608	ZNF16	NM_006958.2	1476	aagcctcacgtgtgtatgtatg	44300	-	transcription_regulat	zinc binding	-
11609	ZNF160	NM_033288.2	786	acgcgacagaagaagacataagaaa	44312	-	transcription_regulat	transcription factor	-
11610	ZNF177	NM_003451.1	1365	aagcactaaccttataatgcaca	44330	-	transcription_regulat	DNA binding	-

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11611	ZNF180	NM_013256.1	1084	tggatttagtgacgcgtattcaat	44339	-	transcription_regulat	DNA binding	-
11612	ZNF184	NM_007149.1	685	ttgctagaaagtgggaatatga	44355	-	see also 4960 line		
11613	ZNF195	NM_007152.1	1007	atgccgagagggaacattacaga	44381	-	transcription_regulat	zinc binding	-
11614	ZNF20	NM_021143.1	1571	tggtaggcctttatttccaatt	44390	-	or	-	-
11615	ZNF214	NM_013249.1	853	cagtagttggggggaatgtca	44407	-	-	zinc binding	-
11616	ZNF216	NM_006007.1	770	ttgcttcacagggttgaactgc	44432	-	-	-	-
11617	ZNF22	NM_006963.1	183	aagtggggcatgactattcgatt	44434	-	transcription_regulat	zinc binding	-
11618	ZNF221	NM_013359.1	1104	gtgggaaaggcttcacatagtaga	44442	-	transcription_regulat	DNA binding	-
11619	ZNF222	NM_013360.1	452	atgacaacccctccacgattaaa	44446	-	transcription_regulat	DNA binding	-
11620	ZNF223	NM_013361.2	590	aggcctcaagactctaccataaa	44452	-	transcription_regulat	DNA binding	-
11621	ZNF224	NM_013398.1	451	aagcattccacaggagatacttc	44460	-	-	DNA binding	-
11622	ZNF225	NM_013362.1	537	aaggcttgctgaagtcacaaacc	44465	-	transcription_regulat	DNA binding	-
11623	ZNF226	NM_015919.2	297	aagatgtatccactatagaaga	44475	-	transcription_regulat	-	-
11624	ZNF228	NM_013380.2	1144	tagcttagaccttaattagttatt	44521	-	transcription_regulat	DNA binding	-
11625	ZNF23	NM_145911.1	2185	cagcgtaaatgggaaactaatgc	44557	-	transcription_regulat	DNA binding	-
11626	ZNF230	NM_006300.1	1506	ttgtacaccggctcttctgtaaa	44568	-	transcription_regulat	DNA binding	-
11627	ZNF234	NM_006630.1	1217	ttgtagctcaaaccttcgtatcc	44580	-	transcription_regulat	DNA binding	-
11628	ZNF235	NM_004234.3	1183	atgctcaattgcctattcacaca	44607	-	transcription_regulat	DNA binding	-
11629	ZNF239	NM_005674.1	929	cagacgtctcttctgaatgaag	44632	-	transcription_regulat	RNA binding	-
11630	ZNF25	NM_145011.2	120	gggaccocgtgacattaaaggatg	44643	-	transcription_regulat	DNA binding	-
11631	ZNF258	NM_007167.1	395	aggccaaactgcatacataag	44656	-	-	-	-
11632	ZNF26	NM_019591.2	1360	ttgttcacatccgaatgcataca	44708	-	transcription_regulat	DNA binding	-
11633	ZNF261	NM_005096.1	4141	ctgctgtgctgcgagatttatga	44784	-	see also 3559 line	-	-
11634	ZNF262	NM_005095.1	2669	caggcacgttcccgacaagacg	44828	-	-	-	-
11635	ZNF264	NM_003417.1	1347	aggctttctccggcactatgttg	44866	-	-	DNA binding	-
11636	ZNF266	NM_006631.2	1647	gagcaagctctgtatttagtca	44876	-	transcription_regulat	DNA binding	-

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11637	ZNF267	NM_003414.3	1113	gtgggtagcttaaacatagt	44907	-	transcription_regulat	DNA binding	-
11638	ZNF271	NM_006629.3	1654	tagtggcttctgactcatt	44930	-	see also 4686 line		
11639	ZNF278	NM_014323.2	1745	aagatcttcgtgtgtatca	44947	-	transcription_regulat	-	Ewing's sarcoma(ユークイング肉腫)
11640	ZNF282	NM_003575.1	1256	atgggacacacgcgactcaatgg	44965	-	transcription_regulat	-	-
11641	ZNF286	NM_020652.1	739	ctgacacggaatagtgtctatga	44972	-	transcription_regulat	DNA binding	-
11642	ZNF288	NM_015642.1	2162	gaggcattaccagtgtagtatct	45010	-	see also 6532 line		
11643	ZNF289	NM_032389.2	1206	aagcatccggcctatttcaaaa	45031	-	-	DNA binding	-
11644	ZNF297	NM_005453.3	1572	gggacgggaataagattttct	45053	-	see also 3800 line		
11645	ZNF297B	NM_014007.1	2338	tgggtctgcggtaagaaatca	45082	-	see also 5452 line		
11646	ZNF300	NM_052860.1	860	ttagcctaccgagttgtataag	45101	-	transcription_regulat	DNA binding	-
11647	ZNF302	NM_018443.1	594	cagaatgcacacatttagaagc	45113	-	transcription_regulat	-	-
11648	ZNF304	NM_020657.1	732	atggaggggcctcatttgaag	45123	-	transcription_regulat	-	-
11649	ZNF317	NM_020933.2	1646	aagctttcagcgcaggtcaaac	45151	-	transcription_regulat	DNA binding	-
11650	ZNF32	NM_006973.1	389	aggtagtctaactacatgaga	45162	-	transcription_regulat	DNA binding	-
11651	ZNF325	NM_016265.1	1138	atggggaaccttatactctaata	45175	-	transcription_regulat	DNA binding	-
11652	ZNF331	NM_018555.3	682	tgcggcagcgtgaccatgacttt	45178	-	transcription_regulat	-	-
11653	ZNF333	NM_032433.1	1929	gtgccgggagaccctataatgt	45222	-	transcription_regulat	DNA binding	-
11654	ZNF334	NM_018102.3	1262	aagaaatcgtatcttgtgtaca	45245	-	transcription_regulat	DNA binding	-
11655	ZNF335	NM_022095.3	1075	gaggagatagcagactaataatcc	45259	-	see also 8267 line		
11656	ZNF336	NM_022482.3	213	tgtactaggactaattgtctact	45283	-	see also 8409 line		
11657	ZNF337	NM_015655.2	361	aggccctctgcagggaatatatg	45311	-	transcription_regulat	DNA binding	-
11658	ZNF339	NM_021220.2	752	caggcattcgtccctacaaatgc	45351	-	transcription_regulat	-	-
11659	ZNF341	NM_032819.3	918	aagacccgacgagctaaagctgc	45364	-	transcription_regulat	DNA binding	-
11660	ZNF345	NM_003419.2	1768	tgggagggattcagagtttcagc	45386	-	transcription_regulat	specific RNA polymerase II transcription factor	-
11661	ZNF347	NM_032584.1	2526	atgtaacgtgtggaagattctaa	45400	-	transcription_regulat	-	-

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11662	ZNF354A	NM_005649.2	702	cagcccaagtcagtccttatta	45408	-	transcription_regulat or	translation regulator	-
11663	ZNF366	NM_152825.1	579	gtgcaacgtggcttccaattct	45419	-	transcription_regulat or	-	-
11664	ZNF382	NM_032825.2	1738	tagaaccacagggaattcagtaa	45448	-	-	-	-
11665	ZNF384	NM_133476.2	534	aagcgtccgttaccagaaatc	45451	-	transcription_regulat or	-	-
11666	ZNF398	NM_020781.2	1351	ttggcagcaggtgttctatgc	45475	-	see also 7966 line	-	-
11667	ZNF408	NM_024741.1	955	aggaccgaattccaaggtatgc	45492	-	transcription_regulat or	DNA binding	-
11668	ZNF409	NM_014894.1	2075	gtgcagctacagagacaacatct	45511	-	-	-	-
11669	ZNF43	NM_003423.1	2467	ccgaccctcaaaccttattgaac	45521	-	transcription_regulat or	DNA binding	-
11670	ZNF430	NM_025189.2	404	gagacatcgatgtagatcaac	45522	-	transcription_regulat or	-	-
11671	ZNF431	NM_133473.1	537	aggctccgaagttagatgagt	45524	-	transcription_regulat or	-	-
11672	ZNF432	NM_014650.1	1699	gtgaatagcaggactgatgtaca	45551	-	-	DNA binding	-
11673	ZNF433	NM_152802.1	1971	atgtgctcgcgacttcaaatgc	45566	-	transcription_regulat or	-	-
11674	ZNF436	NM_030634.1	779	caggcatccgctatcatatagt	45576	-	transcription_regulat or	DNA binding	-
11675	ZNF44	NM_016264.1	1187	tggctcagcacgaattcatgaag	45594	-	transcription_regulat or	-	-
11676	ZNF441	NM_152355.1	2210	ttgtatcagttccttcataaac	45603	-	transcription_regulat or	-	-
11677	ZNF442	NM_030824.1	884	cagccagatagtagtgaatga	45606	-	transcription_regulat or	-	-
11678	ZNF450	NM_014797.1	1348	aagagccattaccgagttcatc	45632	-	see also 5992 line	-	-
11679	ZNF481	NM_020924.2	1025	gcgtgtgcatgccgggaattaac	45676	-	see also 8031 line	-	-
11680	ZNF482	NM_006626.3	1217	cagtggggatcggccatacaaat	45713	-	transcription_regulat or	-	-
11681	ZNF490	NM_020714.1	608	atgcatcaggtctcctctaag	45718	-	transcription_regulat or	DNA binding	-
11682	ZNF510	NM_014930.1	1270	gagaaaccatttgtaagtaatga	45758	-	-	DNA binding	-
11683	ZNF6	NM_021998.2	1312	gagtacaccagtgagacattcagt	45789	-	see also 8241 line	-	-
11684	ZNF7	NM_003416.1	2170	gtggcgttcacaccttaattatc	45877	-	transcription_regulat or	DNA binding	-
11685	ZNF71	NM_021216.3	521	ccgtaaggcgtggcaagaacttc	45883	-	transcription_regulat or	-	-
11686	ZNF74	NM_003426.1	1922	cagccggagagaagccttaacagt	45888	-	transcription_regulat or	-	-
11687	ZNF76	NM_003427.3	1185	ccgagtagctcagagctgtataag	45903	-	see also 2314 line	RNA binding	-

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11688	ZNF79	NM_007135.1	1606	gagtaaccaatctcataatccacc	45914	-	transcription_regulat	molecular_function	-
11689	ZNF8	NM_021089.1	717	gagggagagatttctatacttac	45918	-	transcription_regulat	-	-
11690	ZNF84	NM_003428.1	1591	gagaggtcaggtctcattatca	45944	-	transcription_regulat	-	-
11691	ZNFN1A1	NM_006060.2	745	aggcgcactccgttggtaaac	45959	-	-	zinc binding	-
11692	ZNFN1A2	NM_016260.1	812	aaggaacgtgccacaactatct	45974	-	see also 6775 line	translation	-
11693	ZT86	NM_015871.2	257	gcggagggtacttctatgatcc	46003	-	see also 6547 line	-	-
11694	ZXDA	NM_007156.1	2072	tgtgtgaggtctcaagtgtaagt	46007	-	-	molecular_function	-
11695	BCAS2	NM_005872.1	289	ttgtctcagatgaacgatatga	46018	-	-	-	-
11696	C20orf14	NM_012469.2	954	aaggtacctgacgggatttaaat	46049	-	-	-	-
11697	DDX23	NM_004818.1	1053	aagactccgcaaacctcgttaaga	46086	-	-	-	-
11698	DHX38	NM_014003.2	2577	ttgacggcatcatgtttgtatc	46137	-	-	pre-mRNA splicing	-
11699	DHX8	NM_004941.1	1995	aggtgggtctacaccattcgattt	46193	-	-	pre-mRNA splicing	-
11700	FUSIP1	NM_054016.1	765	aagaaccacctagatccaaatct	46247	-	-	factor	-
11701	HPRP8BP	NM_004814.1	266	cagatttgacgcgactgatatta	46254	-	-	-	-
11702	KHSRP	NM_003685.1	1149	tggcgtgcggatcacagttcaagc	46285	-	transcription_regulat	-	-
11703	LSM1	NM_014462.1	321	cagactgtggagcgtattctagt	46305	-	-	pre-mRNA splicing	-
11704	LSM10	NM_032881.1	263	tggccacagcagcagcatagacaat	46311	-	-	pre-mRNA splicing	-
11705	LSM11	NM_173491.1	1015	caggtattcactcgacacataaa	46327	-	see also 10071 line	factor	-
11706	LSM2	NM_021177.3	250	atgtggtcgtggaaactaaagaat	46331	-	-	pre-mRNA splicing	-
11707	LSM3	NM_014463.1	98	cagcctagatggcgcaattatg	46333	-	see also 5694 line	factor	-
11708	LSM5	NM_012322.1	60	atgtataggatcaagaattcaca	46347	-	-	pre-mRNA splicing	-
11709	LSM6	NM_007080.1	276	cgagggaacaatgtgtgtaca	46353	-	-	pre-mRNA splicing	-
11710	LSM7	NM_016199.1	240	gggcacgtccgtgtgtgtaactct	46354	-	-	pre-mRNA splicing	-
11711	LSM8	NM_016200.2	223	aagtgtactaggaattatatact	46362	-	see also 6718 line	factor	-
11712	MGC14151	NM_032356.3	624	gcgcgtctgagcgttgttaca	46366	-	-	-	-
11713	MPHOSPH	NM_005791.1	428	gagtgcttctcagcattcaaga	46372	-	-	-	-
11714	PIIG	NM_004792.1	654	ttgcggaggtacagatactcagt	46423	-	-	-	-
11715	PRPF18	NM_003675.2	659	ttgcggttgggctaagaatttg	46473	-	-	-	-
11716	PRPF3	NM_004698.1	850	gagcaaggcgccactgtagatgc	46499	-	see also 3220 line	-	-

图 46. (续七)

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11717	PRPF4	NM_004697.3	1443	ttgcttacttggtgcctatgataa	46560	-	-	pre-mRNA splicing factor	-
11718	PRPF8	NM_006445.2	4650	tggctcccgccaccattaatcgagc	46656	-	see also 4507 line	-	-
11719	SCA2	NM_002973.1	3454	gagcagacgcgcgcgtatgctgc	46764	-	see also 2005 line	-	-
11720	SF3A1	NM_005877.3	857	ccgagtggaatggggcaaatcc	46788	-	-	pre-mRNA splicing factor	-
11721	SF3A3	NM_006802.1	193	atgataaaggatgattacgaag	46814	-	see also 4782 line	-	-
11722	SF3B1	NM_012433.1	1727	tgttcattgaacgcgtattgatt	46882	-	see also 5325 line	-	-
11723	SF3B4	NM_005850.3	295	aagccaatacgggtgaacaagc	46964	-	-	pre-mRNA splicing factor	-
11724	SFRS1	NM_006924.3	309	tgcgcacggctatgattacgatg	46980	-	see also 4853 line	-	-
11725	SFRS10	NM_004593.1	769	tgcgcgtcgggattactatgaca	47007	-	-	pre-mRNA splicing factor	-
11726	SFRS11	NM_004768.2	943	ggacacggcggtcacattcttaagt	47028	-	-	pre-mRNA splicing factor	-
11727	SFRS2IP	NM_004719.1	3322	ctgtcccaattggataacagaaa	47091	-	-	-	-
11728	SFRS4	NM_005626.3	1541	tgcgcctccgcgtatgatctag	47156	-	-	pre-mRNA splicing factor	-
11729	SFRS7	NM_006276.3	68	ggggtacggaggagaaaccaagg	47159	-	-	pre-mRNA splicing factor	-
11730	SFRS8	NM_004592.2	1295	cgggaatgcagtgactacttact	47186	-	transcription_regulat or	-	rheumatoid arthritis(関節リウマチ)
11731	SFRS9	NM_003769.2	586	tggggatggtcggagtatctcaga	47226	-	-	pre-mRNA splicing factor	-
11732	SIP1	NM_003616.1	182	ttgcgacttgacggagggttccg	47233	-	see also 2429 line	-	-
11733	SLU7	NM_006425.3	492	taggcgaggttggagccaaattta	47262	-	-	-	-
11734	SMNDC1	NM_005871.2	799	ggaggtgctgctggttaagttgg	47294	-	see also 4086 line	-	-
11735	SNRP70	NM_003089.3	295	gcgcgtacattcgagagtttga	47298	-	-	pre-mRNA splicing factor	-
11736	SNRPB	NM_003091.3	411	aggggacctctcccaagataact	47312	-	-	pre-mRNA splicing factor	-
11737	SNRPB2	NM_003092.3	650	ctgattaccctccaaactatatt	47324	-	-	pre-mRNA splicing factor	-
11738	SNRPD1	NM_006938.2	294	ctggaaacgctgagtatctcgagg	47337	-	-	pre-mRNA splicing factor	-
11739	SNRPD2	NM_004597.4	431	ctgcgcgaacaataagaacctcc	47342	-	-	-	-
11740	SNRPD3	NM_004175.3	504	acgaacacgggtgggttatatcg	47347	-	see also 2803 line	-	-
11741	SNRPF	NM_003095.1	307	aagggttaataatgtctcttata	47352	-	-	pre-mRNA splicing factor	-
11742	SNRPN	NM_003097.3	490	atgctgcagcacattgactatag	47354	-	-	-	Prader-Willi syndrome(プラダー・ウィリア症候群)、diabetes(糖尿病)
11743	TRA2A	NM_013293.2	848	tggcagacgctcgagattcttact	47390	-	see also 5388 line	-	-
11744	U2AF1	NM_006758.1	388	ggggaacgtgtactgcgaagtttc	47406	-	-	pre-mRNA splicing factor	-

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11745	U2AF2	NM_007279.1	214	gcgaacacgcagcaaacctttga	47413	-	-	pre-mRNA splicing factor	-
11746	U5-116KD	NM_004247.1	61	atggataccgacttatatgatga	47421	-	see also 2851 line	-	-
11747	USP39	NM_006590.1	674	cggtattgtgggactgaataac	47489	-	-	-	-
11748	AUH	NM_001698.1	492	cagtgattaaacagattgtctaat	47519	-	-	-	methylglutaconic aciduria(メチルグルタコン酸性)
11749	CPSF1	NM_013291.1	1122	ccgagcgttccactcttgtagcaagg	47537	-	-	mRNA binding, 3' UTR	Alzheimer disease(アルツハイマー病)
11750	ELAVL1	NM_001419.2	211	gtgacatcgggagacgaatttg	47553	-	see also 993 line	-	-
11751	ELAVL3	NM_001420.2	218	cggtccactcctcttgtagtaaatg	47591	-	-	mRNA binding, 3' UTR	-
11752	ELAVL4	NM_021952.2	265	atgtccgacatccaatacaagc	47600	-	see also 8211 line	-	-
11753	PARN	NM_002582.1	1378	cagcctaaacgtgatcatgttct	47669	-	transcription_regulat	-	-
11754	PABPC3	NM_030979.1	1373	aggtctcctctagagtaccattta	47690	-	or	-	-
11755	PABPC4	NM_003819.2	914	ccgggtctgccgcgatgatga	47692	-	-	poly(A) binding	-
11756	TIA1	NM_022037.1	1038	cagcagaatcaaatggatattcc	47738	-	see also 8243 line	-	-
11757	PCF11	NM_015885.2	2487	cagcgacttacagcttttagctga	47817	-	-	pre-mRNA cleavage factor	-
11758	GRSF1	NM_002092.1	548	cagcgggtatgtggaagtatatga	47953	-	see also 1356 line	-	-
11759	RBM8A	NM_005105.2	369	aagggtatatactctagtgaata	47989	-	-	mRNA binding	-
11760	SLBP	NM_006527.2	561	tgcctacgacgtcttatattaaa	48003	-	-	mRNA binding	-
11761	SSB	NM_003142.2	276	aggttgaccctgcttaacaacaga	48020	-	see also 2124 line	-	-
11762	ADAR	NM_001111.2	1719	atgccaggtctagctgacaaacc	48073	-	see also 695 line	-	-
11763	ADARB1	NM_001112.1	828	ttaggtcttcttcagttcttc	48116	-	-	-	-
11764	ADARB2	NM_018702.1	1706	ggagactcagagcgcgacgatatt	48158	-	-	-	-
11765	CARF	NM_017632.1	547	gggatatcagatagtaaatgaagg	48176	-	-	-	-
11766	DHX30	NM_014966.2	584	aggtcccggaatgaggtgtttg	48190	-	see also 6154 line	-	-
11767	DICER1	NM_030621.2	3665	tgttaagctccacgttgagttt	48353	-	see also 8898 line	-	-
11768	FLJ20399	NM_017803.3	953	cagatcacgaggtgcagtagtaca	48440	-	-	-	-
11769	LOC16193	NM_139174.2	1211	ggccctgctgagggtctgttc	48474	-	-	-	-
11770	LRRFIP1	NM_004735.1	1426	gtgtccttttaggcacatagtgatg	48486	-	-	-	-
11771	MRPL44	NM_022915.2	243	aagccgaactggagattaccatgc	48498	-	-	-	-
11772	PRKR	NM_002759.1	2003	ctgagatcgacctaacaacatct	48578	-	kinase_related, phosphatase, apoptosis, cell_cycle, transcription_regulat or	protein tyrosine kinase	-
11773	PRKRA	NM_003690.3	313	gagtaaccgttggtgacataaacc	48583	-	kinase_related, signal_transduction	-	-
11774	RNASE3L	NM_013235.2	1557	acgagtaggtcttcgtgacttata	48628	-	-	-	-
11775	SLC4A1AP	NM_018158.1	371	ggagcgtggacaggaacgtaaaag	48726	-	-	-	-
11776	STAU	NM_004602.1	1882	tggctgcgtgaacatcttaaaag	48793	-	see also 3130 line	-	-
11777	STAU2	NM_014393.1	1105	atgcctcgcgctcgagaatttgt	48801	-	see also 5657 line	-	-

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11778	STRBP	NM_018387.2	2089	aggcgagctccaaataagaag	48866	-	see also 7432 line	-	-
11779	TARBP2	NM_004178.3	579	tcgagtgagcgtttcattgaga	48881	-	transcription_regulat	-	-
11780	Tenr	NM_139243.1	269	cagcgacaaagacgataactaca	48891	-	see also 9680 line	-	-
11781	TLR3	NM_003265.2	304	ccgcaacttcacaaggtatagc	48948	-	receptor_activity、 signal_transduction、 kinase_related	transmembrane receptor	-
11782	HNRPH1	NM_005520.1	656	atgatccaccacgaagcttatg	49037	-	see also 3850 line	-	-
11783	AARS	NM_001605.1	165	aagaggaacgagcatcgatgt	49045	-	-	tRNA binding	-
11784	CARS	NM_001751.3	1415	atggagtcagcgttcaataga	49113	-	-	-	-
11785	FARS1	NM_006567.1	678	tcgctcgcgcataaacaagaga	49135	-	-	phenylalanine- tRNA ligase	-
11786	MARS	NM_004990.2	949	gtgggacagatgagtatgtaca	49168	-	-	tRNA binding	-
11787	SOYE1	NM_004757.1	305	ctgcacgctaattctatggttc	49202	-	-	tRNA binding	-
11788	SLA/LP	NM_016955.1	188	tggcaactggtatgagctaaact	49224	-	signal_transduction	-	-
11789	YARS	NM_003680.2	1057	tagaactccgagtcagttactat	49262	-	see also 6981 line	tyrosine-tRNA ligase	-
11790	RPL5	NM_000969.2	223	gtgtgacaaacagagatatcatt	49289	-	apoptosis	structural constituent of ribosome	-
11791	RPS11	NM_001015.3	257	atgcccctcacttggtaatgtgt	49291	-	-	-	-
11792	EIF4EL3	NM_004846.1	24	aagttgagcgtttgaagatga	49292	-	see also 3358 line	-	-
11793	EIF4G3	NM_003760.2	2332	aggcgctaccttttgaatgttg	49354	-	see also 2573 line	-	-
11794	NCBP2	NM_007362.2	143	ctgtacggtatatgttggaatc	49430	-	-	RNA cap binding	-
11795	RNUJ1	NM_005701.2	369	atgctaataatgatctttct	49440	-	-	-	-
11796	RRP4	NM_014285.4	685	ttgctgatcgagaggtgatcc	49467	-	see also 5592 line	-	-
11797	SRP19	NM_003135.1	370	cagttcccatcactgaagtcagt	49489	-	see also 2115 line	-	-
11798	PTBP1	NM_002819.3	1601	gcgtcgtaaaagattcaagttc	49505	-	-	-	-
11799	A2BP1	NM_018723.2	1808	ccggcgctgcaccgtgtacaaca	49520	-	see also 7576 line	-	-
11800	ACF	NM_014576.2	585	gtggacaactgcgcgattattgt	49551	-	-	-	-
11801	ACO1	NM_002197.1	2204	aggcctaactccacgagaattca	49635	-	see also 1400 line	-	-
11802	AD023	NM_020679.2	533	gggtcgtatgtacaccttacc	49657	-	-	-	-
11803	ADAT1	NM_012091.2	127	cagctatgctatgaacacatagg	49666	-	-	-	-
11804	AKAP1	NM_003488.2	2544	tggactacgagcgagataaagg	49712	-	-	-	-
11805	ALK	NM_004304.3	4972	tggcctgtatcccggaataaga	49753	-	see also 2882 line	-	-
11806	APOBEC1	NM_001644.2	95	tggaggttgacgctctctatga	49765	-	-	-	-
11807	BAT1	NM_004640.3	842	gggactccagcgctatcctagc	49785	-	see also 3154 line	-	-
11808	BRUNOL4	NM_020180.1	89	ccggacacatgaacggattaagc	49809	-	see also 7788 line	-	-
11809	C14orf21	NM_174913.1	483	atcgggggtccatgtattacaaa	49821	-	-	-	-
11810	C15orf12	NM_018285.1	548	gcgcacagtctctagagtaaatg	49838	-	-	-	-
11811	C1orf25	NM_030934.3	844	atgttaggcgcacatgaataaa	49864	-	-	-	-
11812	CGI-37	NM_016101.2	414	ctggattaccttgacacctatgc	49908	-	-	-	-
						-	-	-	Alzheimer disease(アルツハイマー病)



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11813	CGI-79	NM_016024.1	855	gggacgtagttatagaagtagaag	49920	-	-	RNA binding	-
11814	CHERP	NM_006387.4	2677	ggggggacgtccgggataagtgg	49941	-	-	-	-
11815	CIRBP	NM_001280.1	485	cggaggtccagagactactata	49946	-	-	RNA binding	-
11816	CIZ1	NM_012127.1	2058	ccgttgcaacgcgtacttcaaa	49962	-	cell_cycle	zinc binding	-
11817	CPSF2	NM_017437.1	1191	ccgtgtacatagccctaaagtgg	49988	-	see also 7011 line	-	-
11818	CPSF3	NM_016207.2	701	ctgtaacactgtccacgaatttg	50057	-	-	RNA binding	-
11819	CPSF5	NM_007006.1	193	cagcgcatgaggaagaatttga	50105	-	-	-	-
11820	CPSF6	NM_007007.1	1573	tagagaccgtcatgacgattatt	50143	-	-	-	-
11821	CSTF1	NM_001324.1	1355	ctgtctgtggggcacaacaatat	50205	-	-	-	-
11822	CSTF2	NM_001325.1	1235	aggagatcccgagggaataagtc	50228	-	see also 874 line	RNA binding	-
11823	CSTF3	NM_001326.1	1693	cggcttactatagatagatcac	50288	-	see also 876 line	-	-
11824	CUGBP1	NM_006560.2	1233	tcgggtatccagcaatagctgc	50327	-	see also 4596 line	-	-
11825	CUGBP2	NM_006561.1	208	cggagccgctaccagatcaacg	50337	-	see also 4600 line	-	-
11826	DAZAP1	NM_018959.2	288	tggagaagtcgtagattgtgta	50362	-	see also 7608 line	-	-
11827	DAZL	NM_001351.2	902	atgtgtacctccggctattca	50390	-	-	-	-
11828	DDX1	NM_004939.1	1066	aaggcacccgagtggttaattgt	50422	-	see also 3438 line	-	-
11829	DDX10	NM_004398.2	1581	gtggcaccacgcgtgaagattct	50513	-	-	RNA helicase	-
11830	DDX17	NM_006386.3	2179	gagctaccaatagataggttac	50587	-	phosphatase	-	-
11831	DDX18	NM_006773.3	1026	aggccgctctgtggaccatagtc	50615	-	-	ATP dependent RNA helicase	-
11832	DDX19	NM_007242.3	163	gagcaactgtcatcttaaggag	50656	-	-	RNA binding	-
11833	DDX21	NM_004728.1	2112	atgtactaccctcagcagtaaca	50700	-	see also 3240 line	-	-
11834	DDX24	NM_020414.3	2275	aaggagcgaatccggttagctcg	50750	-	see also 7867 line	-	-
11835	DDX25	NM_013264.2	612	atgccattcagggaatcgaatt	50758	-	see also 5382 line	-	-
11836	DDX41	NM_016222.2	415	atggttaagggttagctagatga	50792	-	see also 6727 line	-	-
11837	DDX43	NM_018665.1	655	aggagatcggccattgatgatt	50820	-	-	-	-
11838	DDX5	NM_004396.2	662	aggcgatgggctattgttgg	50877	-	-	RNA helicase	-
11839	DDX56	NM_019082.1	485	gggaccccatctgcataataag	50930	-	-	ATP dependent RNA helicase	-
11840	DDX6	NM_004397.3	1579	gagacctatccatcgtattgg	50984	-	-	RNA helicase	-
11841	DXH34	NM_014681.3	2359	aggagcatcgactgtacgaaatg	51007	-	-	RNA binding	-
11842	DIS3	NM_014953.2	235	ctgcccgacactaatgtgtact	51016	-	-	ribonuclease	-
11843	DKG1	NM_001363.2	94	tggcggatgcgggaagtaattatt	51105	-	cell_cycle	pseudouridylylate synthase	dyskeratosis congenita(先天性角化異常症)
11844	DSCR1L2	NM_013441.2	798	atgcgatgcctgtataattat	51156	-	-	RNA binding	-
11845	DUSP11	NM_003584.1	829	aggacctagtagtaataatcatc	51177	-	phosphatase	prenylated protein tyrosine phosphatase	-
11846	EIF2S1	NM_004094.3	249	aaggcgtatccgttctatcaaca	51189	-	-	Nuclear respiratory factor-1	-
11847	EIF3S4	NM_003755.1	182	aggtcatcaacgggaacataaag	51220	-	-	translation initiation factor	-
11848	EIF3S9	NM_003751.2	641	gggacccgacgcgacttgagaaac	51229	-	-	-	-

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11849	EIF4B	NM_001417.1	1449	ttgggtgaagcgaagtcttaacc	51261	-	-	translation initiation factor	-
11850	EIF4G1	NM_004953.2	3115	ctgctgcggccagctactagtact	51298	-	-	translation	-
11851	ERAL1	NM_005702.1	497	gagaccagctgattctacttga	51425	-	-	initiation factor	-
11852	ETF1	NM_004730.1	1043	ttggcgttgaagatacactaaag	51474	-	see also 3242 line	RNA binding	-
11853	FBL	NM_001436.2	821	gcgtaatggaggacacatttgtga	51515	-	-	RNA binding	-
11854	FLJ10379	NM_018079.3	2874	ctggcgtgattcccatcgaagt	51601	-	-	-	-
11855	FLJ10581	NM_018146.2	377	gggcttcgtcgtacgataagctta	51614	-	see also 7281 line	-	-
11856	FLJ20244	NM_017722.2	607	caggcctacgttcattctgattt	51697	-	-	-	-
11857	FLJ22419	NM_024697.1	1157	aaggcaaaaggacctgttaataa	51715	-	-	-	-
11858	FLJ25270	NM_152520.2	1251	cagcggagcccgagtagttctagc	51740	-	-	-	-
11859	FLJ31121	NM_144723.1	590	tggttcacccaagaagattact	51757	-	see also 9744 line	-	-
11860	FXR1	NM_005087.1	1175	gagctcgtcgggagacctaatc	51807	-	see also 3550 line	-	-
11861	FXR2	NM_004860.2	585	gagcgacttcggccagtttaacc	51833	-	see also 3377 line	-	-
11862	G3BP	NM_005754.2	1270	gtggagttgcgcatcaacagttg	51873	-	signal transduction	protein transporter	-
11863	G3BP2	NM_012297.2	1190	ttgtggaacttcgcatcaatacc	51892	-	see also 5264 line	-	-
11864	HDLBP	NM_005336.1	3096	ttgaccttcacccgttaactt	51967	-	see also 3717 line	-	-
11865	HNRPA0	NM_006805.2	699	gtggaattggcttcgttgtatttc	51990	-	-	RNA binding	-
11866	HNRPA2B	NM_002137.2	974	gggggctacggagggtgttga	52006	-	-	-	-
11867	HNRPA3	NM_004499.2	499	gagagctcgttgactgtacaata	52015	-	see also 3050 line	-	-
11868	HNRPF	NM_004966.2	1219	aagcgaccggagagacacattac	52047	-	-	RNA binding	-
11869	HNRPH2	NM_019597.2	192	tggcacatcaggtattgtttca	52055	-	-	RNA binding	-
11870	HNRPH3	NM_012207.1	443	cagcgaccggagacacatagtag	52065	-	-	-	-
11871	HNRPL	NM_001533.1	1120	cggtagccaggtcttcaatgtct	52107	-	-	RNA binding	-
11872	HNRPM	NM_005968.2	2391	gagattgacgttgaattgtag	52135	-	see also 4169 line	-	-
11873	HNRPR	NM_005826.2	907	ttggtgagcgttattctctatca	52163	-	see also 4062 line	-	-
11874	ILF2	NM_004515.2	859	cagccttggccctaaacgttgc	52201	-	transcription, regulat	-	-
11875	IMP-3	NM_006547.2	1126	ttgttgacgttctattgtgtaa	52242	-	or	-	-
11876	KHDRBS3	NM_006558.1	1027	ccggccagttggagttgtgtac	52264	-	see also 4588 line	-	-
11877	KIAA0116	NM_015004.2	531	ggggtcgaaggacattgaattgt	52283	-	see also 4595 line	3'-5' exoribonuclease	-
11878	KIAA0117	NM_015014.1	139	caggtcgcagtagcttatttgg	52287	-	-	-	-
11879	KIAA0427	NM_014772.1	1517	gcgagatcgtcgacacatctac	52309	-	-	RNA binding	-
11880	KIAA0682	NM_014852.1	1551	tgggatcgtcgtctctacaagaag	52322	-	see also 6053 line	-	-
11881	LGTN	NM_006893.1	1355	ccgaacgatcgtcattactaacg	52388	-	-	translation initiation factor	-
11882	LOC91801	NM_138775.1	206	aggcattgagacagatctctatg	52402	-	receptor activity	-	-
11883	MBNL1	NM_021038.1	1498	acggcagacacgggaatgtaaat	52457	-	-	-	-
11884	MCTSL	NM_014060.1	412	tagtccgatcgcagacacatata	52487	-	see also 8071 line	-	-
11885	METTL3	NM_019852.2	816	caggagatccttagagctattaaa	52505	-	see also 5475 line	-	-
11886	MGC42174	NM_152383.2	1043	gtggcacgcgttaagattatgc	52551	-	see also 7738 line	-	-
11887	MGC4562	NM_133375.2	754	aaggctcgaacacgcctcaattca	52581	-	see also 9842 line	-	-

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11888	MOV10L1	NM_018995.1	2520	caggttcgaggagatagttattg	52711	-	-	hydrolase	-
11889	MRPL1	NM_020236.2	712	atgcctgaacttaatacgtattaag	52739	-	-	-	-
11890	MRPL12	NM_002949.2	493	tagcgaagaacaggacacatttc	52748	-	-	structural constituent of ribosome	-
11891	MRPL23	NM_021134.2	108	gggtgtccgaaccaactcttc	52751	-	-	-	-
11892	MRPL3	NM_007208.2	1184	cgggtcgcccttctattacattg	52783	-	-	structural constituent of ribosome	-
11893	MRPS28	NM_014018.2	438	agggtccggttcggctattaga	52793	-	-	structural constituent of ribosome	-
11894	NHP2L1	NM_005008.1	99	ctgagctgatgtgaatccaaag	52816	-	-	structural constituent of ribosome	-
11895	NOL4	NM_003787.1	1957	atgggacctatagttaccatagt	52848	-	-	-	-
11896	NOL5A	NM_006392.2	1210	ctgaggtgccacggagtgtatc	52884	-	-	see also 4485 line	-
11897	NOPD1	NM_182543.1	1530	tagcagctgacctataacactgg	52922	-	-	-	-
11898	NOVA1	NM_002515.1	231	tagttatctctgtgggactctaaa	52930	-	-	-	-
11899	NUFIP1	NM_012345.1	835	aagggtatgtccagacattcaca	52965	-	-	-	-
11900	NXF2	NM_017809.2	894	gggaggtcttccgggataattt	53028	-	-	transcription_regulat	-
11901	NXF3	NM_022052.1	319	aagaccacacccacgttaacatg	53039	-	-	or	-
11902	OAS1	NM_002534.1	858	tcggaggtcttgggaattagtaa	53084	-	-	-	-
11903	OAS2	NM_002535.1	1530	cagggtctcatgatctgtataaa	53092	-	-	-	-
11904	OAS3	NM_006187.1	427	ccgcctgacacccgttagatcttg	53105	-	-	nucleotidyltransferase	-
11905	OIP2	NM_181503.1	133	ctgtcaacatcggttcaattagt	53129	-	-	see also 10233 line	-
11906	PABPC5	NM_080832.1	723	cagccagatgacogcttaagaaa	53188	-	-	see also 9528 line	-
11907	PABPN1	NM_004643.1	1841	gagctggaagctcactttcatgg	53188	-	-	see also 3163 line	-
11908	PAPOLA	NM_032632.2	309	gagactgactgctgactactacaca	53199	-	-	see also 9264 line	-
11909	PAPOLB	NM_020144.3	1941	cagggttgcattaaacgaaggt	53259	-	-	transcription_regulat	-
11910	PAPOLG	NM_022894.2	2054	ccgtagtaggacgaaatgtcatt	53333	-	-	or	-
11911	PMSOL1	NM_005033.1	1244	aggcgggtgtgatacgaactatca	53364	-	-	see also 8496 line	-
11912	PMSGL2	NM_002685.1	310	ataggtgtcgcagcaacataaag	53378	-	-	see also 3518 line	-
11913	PNPT1	NM_033109.2	2040	cagtatataccgcccaacaact	53498	-	-	see also 1748 line	-
11914	POLR2G	NM_002696.1	586	tggctccctgatggacgattaact	53520	-	-	-	-
11915	POP4	NM_006627.1	639	gtgaacggcttcggaagaagttc	53540	-	-	RNA binding	-
11916	PPIE	NM_006112.1	480	cagatgtctctcgcttctgtatgt	53553	-	-	ribonuclease P	-
11917	PPP1R8	NM_002713.2	1058	gagcagggcgcagagaactttg	53556	-	-	see also 4248 line	-
11918	PS1D	NM_016505.2	302	aagccctctgagatagatagtt	53582	-	-	phosphatase	-
11919	PSMA1	NM_002786.2	452	cagataccacacacacagatagtg	53616	-	-	see also 1814 line	-

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11920	PSMA6	NM_002791.1	209	cagggtggccttacatcagtagc	53636	-	-	proteasome endopeptidase	-
11921	PUM1	NM_014676.1	98	gagcgttgcatgtcttgaaga	53639	-	see also 5858 line	-	-
11922	PUM2	NM_015317.1	3084	aagattccacctcaccattactac	53822	-	see also 6328 line	-	-
11923	RAE1	NM_003610.2	635	tgggatactcgcagtcgaatcc	53844	-	see also 2422 line	-	-
11924	RALY	NM_007367.2	413	gagacacattctcttaagtatgg	53876	-	-	-	-
11925	RBM10	NM_005676.3	2103	atgagacctcgcgtactactat	53892	-	see also 3943 line	-	-
11926	RBM11	NM_144770.1	466	ctgcagcttcttactatgaat	53913	-	-	RNA binding	-
11927	RBM15	NM_022768.3	2117	cagtagcccgaggatcgttacaaca	53958	-	-	RNA binding	leukemia(白血病)
11928	RBM16	NM_014892.1	1366	tggcgttcgcgtcaagatcaaga	54000	-	see also 6078 line	-	-
11929	RBM3	NM_008743.2	92	tgggagggctcaactttaacacc	54084	-	-	RNA binding	-
11930	RBM7	NM_016090.2	675	atgggtctgaccatcattacaga	54085	-	see also 6657 line	-	-
11931	RBM9	NM_014309.1	1210	tggcgtctggcgggtttatacc	54101	-	transcription_regulat or,	RNA binding	-
11932	RBM52	NM_002898.1	1203	cagagcatggggtctattcttc	54113	-	-	-	-
11933	RBM53	NM_014483.1	1180	ttggscacacacaggacgtatat	54137	-	see also 5701 line	-	-
11934	RBPMS	NM_006867.1	708	aagggtctatgagggtctcttat	54145	-	-	RNA binding	-
11935	RDBP	NM_002904.4	433	ccgttcagagaggacatctgc	54153	-	transcription_regulat or	RNA binding	-
11936	RENT1	NM_002911.2	331	gagttcacgcagcttactcttc	54159	-	see also 1941 line	-	-
11937	RNA5E1	NM_002933.3	250	cagcagctccaccctactgtaacc	54203	-	-	pancreatic ribonuclease	-
11938	RNA5E1	NM_002936.3	417	aagcgcagagccgtatgcgaagc	54206	-	-	ribonuclease H1	-
11939	RNA5E2	NM_006397.2	800	aagaggcgggaagatgttatatgg	54217	-	-	ribonuclease H	-
11940	RNA5E1	NM_021133.2	2058	aagtgacacactaagattatga	54258	-	kinase_related	protein kinase	prostate cancer(前立腺癌)
11941	RNA5E2	NM_003730.3	987	cagacaatggtcagatagaact	54276	-	-	endoribonuclease	-
11942	RNMT	NM_003799.1	1553	ttgggaaccttaagtaaatcaga	54308	-	-	-	-
11943	RNPC1	NM_017495.4	665	tcgctgtcctgcctcacattga	54310	-	-	-	-
11944	RNPC2	NM_004902.2	467	aagtcgtatgcatgaacgaaga	54315	-	see also 3405 line	-	-
11945	RPL18	NM_000979.2	108	gaggctgttggtcaagttataca	54396	-	-	structural constituent of ribosome	-
11946	RPL37A	NM_000998.2	36	atggccaaacgtaccacgaagaagt	54403	-	-	structural constituent of ribosome	-
11947	RPL38	NM_000999.2	214	tcgatgcagcagatcacctttaca	54406	-	-	structural constituent of ribosome	-
11948	RPL3L	NM_005061.2	267	gaggcgggtgacaattgtagaac	54407	-	-	structural constituent of ribosome	-
11949	RPL4	NM_000968.2	691	atgagataatgggtatcatcaag	54416	-	-	structural constituent of ribosome	-

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11950	RPL8	NM_000973.2	220	gggatccgctatcggtttaagaag	54419	-	-	-
							dolichyl-	
11951	RPN1	NM_002950.2	1524	ttgcagagacocgtcaataagtac	54454	-	-	diphospho-
11952	RPP14	NM_007042.1	330	aggttgatcgcgccttacccttg	54462	-	-	oligosaccharide-
								protein
								ribonuclease P
								structural
11953	RPS21	NM_001024.2	275	cogatgccatogtcotaaagaac	54475	-	-	constituent of
11954	RPS29	NM_001032.2	159	ccgtcagtcacgcgaaggatatcg	54481	-	-	ribosome
								zinc binding
								structural
								constituent of
11955	RPS3	NM_001005.2	150	caggacagaaaatcatattcttag	54483	-	-	ribosome
								structural
								constituent of
11956	RPS4Y	NM_001008.2	504	agggactggcaagataatacaact	54486	-	-	ribosome
11957	RPS4Y2	NM_138963.1	612	ttcgatgtgtacatgtgaagg	54492	-	-	-
								structural
11958	RPS5	NM_001009.2	256	ttgtggagcgccctcacctaactcc	54494	-	-	constituent of
								ribosome
								structural
11959	RPS9	NM_001013.2	328	gggcctgaagatagagagatttct	54498	-	-	constituent of
								ribosome
11960	RRP40	NM_016042.1	578	gtgactctgggcttaattagaaa	54512	-	-	3'-5'
11961	RRP41	NM_019037.1	407	cagctcgcgcagactcttcgaagc	54520	-	-	exoribonuclease
								3'-5'
11962	RRP46	NM_020158.1	255	gtgatctcgtagcccgcaagattgg	54531	-	-	exoribonuclease
								structural
11963	RTCD1	NM_003729.1	1204	aagacgcgcgtaaagatacttat	54568	-	-	constituent of
11964	SARS	NM_006513.2	423	gtgtgacgcggagcggataaagt	54582	-	-	ribosome
								RNA-3'-phosphate
								cyclase
								see also 4553 line
								structural
11965	SBP2	NM_024077.2	899	ctgctaataccgctaccattct	54611	-	-	constituent of
11966	SCA1	NM_000332.1	2809	cgggcgctggccgfgatagacttc	54660	-	-	ribosome
11967	SF1	NM_004630.1	1115	cggaggttggctcgtcgttaaattgg	54687	-	-	see also 281 line
11968	SF3A2	NM_007165.3	217	aggaccgctactctatgaagaac	54695	-	-	see also 3145 line
11969	SF4	NM_021164.2	55	ttggggttgtccccctaaatct	54702	-	-	RNA binding
11970	SFRS14	NM_014884.1	768	cagaggtcggcgtctaaacatcg	54733	-	-	-
11971	SFRS3	NM_003017.3	288	gagctagatggaagaacacctatg	54782	-	-	-
11972	SKIV2L	NM_006929.3	1797	ctgaagcgtgtcagatctatgt	54806	-	-	RNA binding
11973	SNRPA	NM_004596.3	797	aagaccgactcagatatcttgc	54836	-	-	RNA binding

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11974	ISNRPA1	NM_003090.1	669	aagaatgccatagcaaatgcttc	54844	-	see also 2080 line	
11975	SRP54	NM_003136.2	1550	aggtagcgacatgtctaagaatg	54881	-	see also 2116 line	
11976	SRP68	NM_014230.2	1531	atctggcccttcaagaacagc	54924	-	see also 5548 line	
11977	SUPV3L1	NM_003171.2	1874	tggatcacgccgatacatcaaatg	55025	-	see also 2149 line	
11978	SURF6	NM_006753.3	663	cggctgctgatttcataaaggtag	55047	-	RNA binding	
11979	SYNCRIP	NM_006372.3	1427	aggcaaggcgtaggtaagt	55074	-	see also 4463 line	
11980	SYNJ1	NM_003895.1	359	ctgcgaatcgattcttcagatga	55090	-	phosphatase	inositol-1, 4, 5-trisphosphate 5-phosphatase
11981	SYNJ2	NM_003898.1	2434	ttggctcagccgctcctacgataca	55255	-	see also 2655 line	
11982	TARBP1	NM_005646.2	3230	ctgtgttttagcggtgatcaaaaga	55336	-	transcription, regulat	-
11983	TEP1	NM_007110.3	7421	tagtaggacccttaatatcgataa	55502	-	or	-
11984	TRNT1	NM_016000.2	341	tggtgattcggatgataaacaaca	55523	-	see also 4953 line	
11985	TTC14	NM_133462.1	698	tagcagatctctgtatagctct	55578	-	see also 6602 line	
11986	UPF2	NM_015542.2	1216	caggcgattctacattctaaag	55646	-	see also 9581 line	
11987	WBP4	NM_007187.3	182	taggcctagtgtagaatttcattg	55726	-	-	-
11988	WIG1	NM_022470.2	540	atgtaagaactcgcgaataattac	55759	-	see also 4986 line	
11989	XRN2	NM_012255.2	1679	gagaaattccgtcggaaagtgt	55759	-	see also 8391 line	
11990	ZNF318	NM_014345.1	3424	aagcgactgacagaagataactgt	55829	-	see also 5224 line	
11991	ZPR9	NM_033414.2	122	tggcgactgacacctgcataact	55988	-	see also 5630 line	
11992	BRF2	NM_018310.2	460	tgggtgggtgctgcttctaact	56077	-	see also 3422 line	
11993	BZW1	NM_014670.1	949	cagttgtcatcgggaatagtctgg	56108	-	-	-
11994	BZW2	NM_014038.1	402	tgaggaacgcgcgatagatgatg	56136	-	see also 5848 line	
11995	CGI-09	NM_015939.3	388	aagcgggcactgataatcgaaat	56160	-	see also 5468 line	
11996	COPS5	NM_006837.2	726	atgcaatcgggtggtatcatagc	56199	-	-	-
11997	COPS6	NM_006833.4	772	gggagaggtcccttctaactg	56235	-	see also 4791 line	
11998	EIF1AY	NM_004681.2	321	atgccatatcagagggaattga	56250	-	translation initiation factor	-
11999	EIF2A	NM_032025.1	107	aggatcagaaggactgtacatagg	56253	-	-	-
12000	EIF2B1	NM_001414.1	437	gcggccaagaaggcgtatttagtg	56311	-	see also 977 line	
12001	EIF2B2	NM_014239.1	163	aggattgctggccagatcatca	56321	-	translation initiation factor	-
12002	EIF2B3	NM_020365.1	664	cagaagcatcctagaatacgttt	56349	-	translation initiation factor	-
12003	EIF2B4	NM_015636.2	1292	gtggctcggccataatgtacc	56379	-	translation initiation factor	leukoencephalopathy(白質脳症)
12004	EIF2B5	NM_003907.1	1961	gcggcgacgcgaccatttgggaag	56431	-	see also 6525 line	
12005	EIF2C1	NM_012199.2	1039	aagtaaccgctgtgtatgttac	56442	-	-	-
12006	EIF2C2	NM_012154.2	464	gcgttacacgatgcactttcagg	56475	-	see also 5187 line	
12007	EIF3S1	NM_003758.1	778	ctggcagattatgtgtgtatga	56506	-	translation initiation factor	-
12008	EIF3S10	NM_003750.1	1167	cagcgtcgcctgtcaacactact	56547	-	translation initiation factor	-

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12009	EIF3S2	NM_003757.1	934	atgttaccgtccgtatccattac	56637	-	-	translation initiation factor	-
12010	EIF3S3	NM_003756.1	601	aagaagtgccgattgtaataaa	56655	-	-	translation initiation factor	-
12011	EIF3S6	NM_001568.1	24	tggcggagtagaacttgactact	56664	-	-	translation initiation factor	breast cancer(乳癌)
12012	EIF3S6P	NM_016091.1	34	atgtcttaccgctgatgatta	56710	-	see also 6658 line	-	-
12013	EIF3S7	NM_003753.2	643	cggcctaccagggaatcgaatg	56734	-	-	translation initiation factor	-
12014	EIF3S8	NM_003752.2	417	ctgaacctagaggactatctaat	56770	-	see also 2568 line	-	-
12015	EIF4EBP2	NM_004096.3	411	ctgttgatcgtcgcaattctcc	56789	-	-	-	-
12016	EIF5	NM_001969.3	1158	aaggctcgaatgagatgaatca	56811	-	see also 1247 line	-	-
12017	EIF5A2	NM_020390.5	346	tgtctcttactcacacacatgg	56839	-	see also 7862 line	-	-
12018	FLJ20288	NM_024668.1	1252	ttggatatgttcgcttttact	378012	-	-	-	-
12019	GC20	NM_005875.1	383	caggcgattgcagatgattga	56856	-	-	translation initiation factor	-
12020	IF2	NM_015904.2	1981	gagaaacggcgacttgaacatag	56887	-	-	translation initiation factor	-
12021	ITGB4BP	NM_002212.2	188	ggcggagctctcgataccatcc	56943	-	-	-	-
12022	KIAA0664	NM_015229.2	884	ctgaatcagtcacacagcttata	56951	-	-	translation initiation factor	-
12023	LAMA5	NM_005560.3	9880	ggccccacacagcggtattgac	56983	-	-	structural molecule	-
12024	LRIG2	NM_014813.1	2325	agatgaactcgggtgttaccagt	57039	-	-	-	-
12025	MFHAS1	NM_004225.1	1905	acagcgtcttcgggcacagttgc	57078	-	signal transduction	-	osteosarcoma(骨髄性骨肉腫)
12026	MGO11102	NM_032325.2	682	gagggtccagctcagaagaaga	57100	-	-	-	-
12027	MGC3207	NM_032285.1	789	cggcaaggagatcattatgaag	57105	-	-	-	-
12028	MRPL49	NM_004927.2	352	acgctctggatgcacacatcc	57112	-	-	structural constituent of ribosome	-
12029	MTIF2	NM_002453.1	301	ttgtctacatttcacactatta	57115	-	-	translation initiation factor	-
12030	MTIF3	NM_152912.3	382	tagtcagcgagttattcaattat	57183	-	-	-	-
12031	PSMD7	NM_002811.3	477	ctgtcctaattccgtatttgta	57203	-	see also 1828 line	-	-
12032	RRN3	NM_018427.2	1054	tccgacctgataaacaattttg	57219	-	transcription_regulat or	-	-
12033	EEF1A2	NM_001958.2	1464	tggccgtaggcgctcatcaagaac	57228	-	-	translation elongation factor	-
12034	EEF2	NM_001961.2	744	aagcagtttgcggagatgtatgt	57239	-	-	translation elongation factor	-
12035	EEF1	NM_024996.5	1948	gagcacacacatggttattct	57301	-	see also 8830 line	-	-
12036	EEF2	NM_032380.3	575	ttgtactattccggatatacaag	57326	-	see also 9178 line	-	-
12037	ELL3	NM_025165.1	240	aaggccaccgagggtatctgaga	57397	-	-	-	-
12038	FLJ13119	NM_024580.3	2058	cagcgatgcctggatgacttaaa	57456	-	see also 8648 line	-	-
12039	FLJ13220	NM_021927.1	1527	ctgcacaattcccgataaatca	57506	-	see also 8199 line	-	-

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12040	GSPT1	NM_002094.1	1522	ccgaactcaatagatcagtgga	57534	-	cell_cycle	translation elongation factor	-
12041	GSPT2	NM_018094.1	1734	tggacgcacgatttgattcaga	57548	-	-	-	-
12042	GTPBP2	NM_019096.2	1012	ttgctcagtcacccaatgcacc	57590	-	-	-	-
12043	HBS1L	NM_006620.2	1830	caggcgatcatgttagcttact	57647	-	see also 4680 line	-	-
12044	HTATSF1	NM_014500.3	409	acgatggcgcatctagttctacc	57674	-	transcription_regulat or	-	-
12045	SELB	NM_021937.2	1222	caggctagatcgggacattcaca	57735	-	-	protein-synthesizing	-
12046	SUPT16H	NM_007192.2	1698	aggttctcgggcagcattactta	57764	-	see also 4990 line	-	-
12047	TUFM	NM_003321.3	388	atcggtctcatgtggagtagagc	57803	-	see also 2253 line	-	-
12048	FLJ38663	NM_152269.1	646	gagcaccgtgggtttatttcatt	57820	-	-	-	-
12049	ICT1	NM_001545.1	223	tagatgcgttgacaatatcttat	57837	-	-	translation release factor	-
12050	MTRF1	NM_004294.2	932	aggaacgatctcgggttatgtcc	57862	-	-	translation release factor	-
12051	ABCF1	NM_001090.1	2423	cagagtggttagccaatcgtatgg	57906	-	-	-	-
12052	EEF2K	NM_013302.2	275	cagcgacgatgaggaagggtact	57908	-	kinase_related	translation factor, nucleic acid binding	-
12053	PET112L	NM_004564.1	1610	tggtccggaaagcgactcaaacg	57963	-	see also 3103 line	-	-
12054	AF020591	NM_014480.1	904	gagctttctgcagaggtatttac	57971	-	transcription_regulat or	-	-
12055	AFG3L2	NM_006796.1	222	cggacgctttaccgattgttac	57988	-	-	metalloendopeptida se	-
12056	ARIH2	NM_006321.1	389	ctgtctaaaggtatctcaatca	58047	-	-	zinc binding	-
12057	ASK	NM_006716.2	1277	cagtatcaagttgttgatgat	58078	-	see also 4734 line	-	-
12058	BANK1	NM_017935.2	1276	gggtcagaccccgacacatttg	58119	-	-	-	-
12059	BAT4	NM_033177.2	1183	gcggctcagctcgtcgaagaagc	58153	-	-	-	-
12060	BDG29	NM_015144.1	2707	tgttgaggcagtagcaatgggtcc	58187	-	-	-	-
12061	BOLL	NM_033030.3	651	tagggatccctcgttctagtata	58203	-	see also 9351 line	-	-
12062	BRUNOL6	NM_052840.2	1000	gggtccgcgacacgctctacaata	58224	-	see also 9434 line	-	-
12063	C13orf10	NM_022118.3	849	gtggacccaataactctacgtaag	58257	-	see also 8282 line	-	-
12064	C14orf114	NM_018199.1	569	gtgtgtgacatcccatcttgaag	58314	-	see also 7314 line	-	-
12065	C14orf6	NM_145250.1	613	agggtgccaataccatagtggtac	58341	-	-	-	-
12066	C20orf99	NM_033089.4	1008	cagcccaagacatgctttaaatg	58347	-	transcription_regulat or	-	-
12067	C21orf107	NM_018963.3	3797	aggagcgtctcgtcggttagtttg	58476	-	see also 7610 line	-	-
12068	CGI-18	NM_015947.1	768	ccgaacacgaggtatgtctttt	58580	-	transcription_regulat or	-	-
12069	CGI-72	NM_016018.3	1147	gagagctgacttaacaagatta	58626	-	-	RNA binding	-
12070	CNOT4	NM_013316.1	1722	cagcaccgagcgggttaataatc	58683	-	see also 5396 line	-	-
12071	COL4A3	NM_000091.2	3842	aggctgcgccgggtgcaattatcc	58723	-	apoptosis, signal_transduction	-	Alport syndrome(アルポート症候群)、Goodpasture syndrome(グッドパスチャー症候群)、hematuria(無症候性血尿)



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12072	COVA1	NM_006375.2	1175	ccgtcgtagcgccaataactct	58759	-	see also 4465 line
12073	CPEB1	NM_030594.2	1547	ctggatttagccgacagtaact	58808	-	see also 8893 line
12074	CPEB3	NM_014912.1	1351	gagtagaacctactactagaaag	58843	-	see also 8085 line
12075	CPEB4	NM_030627.1	1753	aaggtctctaaactatttat	58872	-	see also 8910 line
12076	CRSF4	NM_008693.1	609	aagtacaatccgccattacaaa	58905	-	see also 4726 line
12077	CSTF2T	NM_015235.1	359	ctgcagcccccattattgactca	58910	-	-
12078	DARS	NM_001349.1	1503	tggattggaacgagttactatgc	58959	-	see also 896 line
12079	DC50	NM_031210.3	49	cggcgctctgctgaagatcaat	58962	-	-
12080	DDX26	NM_012141.1	2710	tggaaacggccaacacatcatg	59037	-	see also 5148 line
12081	DDX31	NM_022779.7	1440	acggcgctagctgatatcagttt	59077	-	-
12082	DDX39	NM_005804.2	621	tggcgctctgctgggaataggagc	59105	-	-
12083	DDX4	NM_019039.1	407	agcgggctatcgagatggaata	59127	-	see also 7670 line
12084	DDX42	NM_007372.1	1381	atgtgacacgagacattgatacc	59225	-	see also 5095 line
12085	DDX46	NM_014829.1	1799	ctgatoagacagacggttatgtt	59284	-	see also 6032 line
12086	DDX47	NM_016355.2	550	aagccgaccgaatactgaatatg	59325	-	see also 6838 line
12087	DDX49	NM_019070.3	88	tcgtgctctgctggaaacaatgctg	59362	-	-
12088	DDX51	NM_175066.2	1527	gaggggtctctgcttcaactaact	59429	-	-
12089	DDX52	NM_007010.2	39	atgagcgtccacagatctctttcg	59430	-	see also 4890 line
12090	DDX53	NM_182699.1	1298	cagaccacagacagctgttatgaca	59498	-	-
12091	DDX54	NM_024072.2	335	ctgagctacccgggttccaagg	59534	-	-
12092	DHX15	NM_001358.1	913	tggagcgttatggtgaataatt	59559	-	see also 911 line
12093	DHX16	NM_003587.3	416	aagaacogatcttataggtaact	59620	-	see also 2380 line
12094	DHX29	NM_019030.1	3507	ctgacgatctacaatgcatact	59735	-	-
12095	DHX35	NM_021931.2	495	atggttatccgttggtaacaaa	59799	-	nucleic acid binding
12096	DHX36	NM_020865.1	2380	tagggagactggtttcagatacg	59930	-	see also 8005 line
12097	DHX37	NM_032656.2	2779	cagctgaccacccgcagtcacatgc	59975	-	-
12098	DHX40	NM_024612.3	2010	atgctttgtggggctatttca	59992	-	-
12099	DIAPH3	NM_030932.2	1913	atgctcaaacctctggatttaac	60055	-	see also 8967 line
12100	DKFZP434	NM_032143.1	242	aagagatatcatcgattatgaaa	60079	-	-
12101	B195	NM_031284.3	916	tagagctggccagtatgactaac	60152	-	see also 9002 line
12102	DKFZP434	NM_015496.3	806	ggagatgatcgacgaacagtaga	60192	-	-
12103	DKFZp547	NM_152608.2	2099	togtagttagacccttgaataac	60347	-	transcription_regulat or
12104	DKFZP564	NM_031306.1	935	ctgttatcatcgagcttttattc	60371	-	see also 9009 line
12105	DKFZp761	NM_032280.1	3680	cgggctcttggcgaaatttccttt	60422	-	-
12106	137	NM_152411.1	182	gagactctctgtctctatagatga	60432	-	transcription_regulat
12107	DND1	NM_194249.1	298	acgagttccgcttgatgatgacc	60451	-	or
12108	DRB1	NM_152945.1	610	ttaggctactgacgatactaaa	60461	-	see also 9967 line

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12109	ECGP	NM_018025.2	1856	gcgtacgacgaggttcttagtac	60515	-	-	-
12110	EHD2	NM_014601.2	1073	gcgagttcacgcttacatcatca	60538	-	-	nucleic acid binding
12111	EHD3	NM_014600.1	825	gcgggtgaaccgcatcattctgc	60540	-	-	nucleic acid binding
12112	ENDOGL1	NM_005107.1	242	cagaggaaggtgttaactaat	60547	-	-	endonuclease
12113	ENPP1	NM_006208.1	243	aagtctctcgtcgtgattgtcoa	60570	-	see also 4303 line	-
12114	ENPP2	NM_006209.2	470	gagtcctcgttgggttatgatga	60650	-	see also 4304 line	-
12115	ENPP3	NM_005021.2	1261	ccgcatccgagctcataatatac	60768	-	phosphatase	-
12116	FAM12A	NM_006683.3	329	aagggagcgaccgatagataaaa	60818	-	-	-
12117	FAM12B	NM_022360.2	276	tggatcgcttccgaaatgcatat	60836	-	-	molecular_function unknown
12118	FLJ10094	NM_017993.1	700	gtgttttgcggagattaccaga	60854	-	see also 7191 line	-
12119	FLJ10252	NM_018040.1	250	gagaccattctcgaagtatatct	60889	-	-	-
12120	FLJ10290	NM_018047.1	254	tggagtcgcgcatcgctttcaaga	60931	-	-	-
12121	FLJ10377	NM_018077.1	676	ttgggcccgtggcaagagataaat	60973	-	see also 7234 line	-
12122	FLJ10486	NM_018109.2	526	acgcgtacaggtcaagtaatacgt	61014	-	see also 7257 line	-
12123	FLJ10634	NM_018163.1	374	caggacactagagagcaagagatcg	61058	-	-	-
12124	FLJ11016	NM_018301.2	417	cggagcgtcagcgcatcttttgc	61072	-	see also 7373 line	-
12125	FLJ11126	NM_018332.3	118	ctgtcaagtcgatgaccaatttg	61096	-	-	-
12126	FLJ11142	NM_018338.2	1602	gggtaccgccgaatggtaaaccttc	61144	-	-	-
12127	FLJ11175	NM_018349.1	353	gtgaagacgctggcattctaca	61183	-	-	-
12128	FLJ11637	NM_024967.1	493	ctgcgcaagaattgtgtactag	61220	-	transcription_regulat	-
12129	FLJ11806	NM_024824.2	1611	cagacacgagatottgtacaacc	61290	-	or	-
12130	FLJ12455	NM_022078.1	91	gtattgcctgcggccattacg	61314	-	-	-
12131	FLJ12529	NM_024811.2	398	caggatttcgctctataggagt	61339	-	see also 8750 line	-
12132	FLJ12606	NM_024804.1	1462	gtgtagtgaactcagcctataatc	61362	-	transcription_regulat	-
12133	FLJ12644	NM_023074.2	1253	cagaaggcgcaatctcaacataca	61375	-	transcription_regulat	-
12134	FLJ12998	NM_022764.1	491	aggctacgccgcatctggaatag	61408	-	or	-
12135	FLJ13590	NM_024840.2	1002	aagtcgcgcctcattctataatca	61424	-	transcription_regulat	-
12136	FLJ14451	NM_032786.1	738	aggacgacgcatgatctctatg	61444	-	or	-
12137	FLJ14779	NM_032838.2	207	tggttcaatggggcattcttatt	61457	-	transcription_regulat	-
12138	FLJ20035	NM_017631.3	506	ccgagtatcggtatttcaacttc	61475	-	or	-
12139	FLJ20070	NM_017652.1	809	aagtcotttgcattatcatctag	61571	-	transcription_regulat	-
12140	FLJ20171	NM_017697.1	976	gagttcgccacagatatattgtac	61598	-	or	-
12141	FLJ20249	NM_015590.2	295	gggcaggatggagtagacagataag	61604	-	-	-
12142	FLJ20273	NM_019027.1	572	cggctacgccttcgtcatgtact	61614	-	-	-
12143	FLJ20344	NM_017776.1	566	aaggcaaaagactccataaattt	61626	-	transcription_regulat	-
12144	FLJ20433	NM_017820.2	1951	gaggggcgctgcccctcagattcc	61628	-	or	-

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12145	FLJ20557	NM_017879.1	561	tgggcatgtcggtctttcacc	61638	-	transcription_regulat	-
12146	FLJ21839	NM_021831.3	1429	gagagtggtgtgttactatgt	61663	-	or	-
12147	FLJ21918	NM_024939.1	1415	aggtctgaaccgctatgcaccc	61699	-	see also 8182 line	-
12148	FLJ21977	NM_032213.3	800	aagctgacggctcgaatttga	61717	-	see also 8811 line	-
12149	FLJ22347	NM_022830.1	1196	cggtagtctcctcagtaacc	61729	-	apoptosis	-
12150	FLJ22559	NM_024928.3	1245	cagacaatggagcactactaca	61762	-	-	-
12151	FLJ22611	NM_032226.1	979	tggaccagcggtactattcagg	61778	-	see also 8810 line	-
12152	FLJ23233	NM_024691.2	536	taggactgtcagttcaaacatt	61792	-	transcription_regulat	-
12153	FLJ23506	NM_024833.1	1298	aagagttcagtcggaacacaca	61803	-	or	-
12154	FLJ25078	NM_152485.2	688	ctgcagaggacttatctctagc	61809	-	transcription_regulat	-
12155	FLJ30594	NM_153011.1	564	cagtgagggttacctcctaaatc	61818	-	-	-
12156	FLJ30791	NM_144694.1	634	aagacatctgtacagtaattga	61826	-	transcription_regulat	-
12157	FLJ30921	NM_152360.2	1167	ttagacatggcgagttcatact	61839	-	or	-
12158	FLJ30927	NM_144690.1	951	tagtgaagctcacagttgattg	61853	-	transcription_regulat	-
12159	FLJ30932	NM_144693.1	662	aagtcacgtgagtgagaaactca	61871	-	transcription_regulat	-
12160	FLJ31030	NM_152478.1	948	gtgcaaacctggcgcaacataag	61900	-	transcription_regulat	-
12161	FLJ31100	NM_173631.2	604	tggaggaagaccagacatttgtga	61907	-	transcription_regulat	-
12162	FLJ31139	NM_173657.1	380	gtggacgattacgccgaataact	61922	-	or	-
12163	FLJ31295	NM_152320.1	1060	aagacctttggcggaagacatca	61954	-	transcription_regulat	-
12164	FLJ31875	NM_182531.1	601	cagcacttcggcgagtagatct	61965	-	or	-
12165	FLJ31986	NM_152476.1	2552	cagctcgtattgcacatttgaaa	62030	-	transcription_regulat	-
12166	FLJ32130	NM_152458.4	858	ctgcaagagtcgttcacttacc	62032	-	or	-
12167	FLJ32191	NM_144689.3	462	gagtccaattccagggtatttt	62039	-	transcription_regulat	-
12168	FLJ32932	NM_152909.2	645	gaggggatgattggataccttca	62060	-	or	-
12169	FLJ33071	NM_152457.1	987	acgaatctactaaactgtgataaa	62079	-	transcription_regulat	-
12170	FLJ33979	NM_152636.1	756	caggcacttgcactatctcctaag	62089	-	or	-
12171	FLJ34817	NM_152303.1	980	ttgtgtggcagcgagtagtagat	62111	-	transcription_regulat	-

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12172	FLJ34917	NM_153263.1	1734	aggcttacccttgaggtaaac	62135	-	transcription_regulat	-	-
12173	FLJ35863	NM_152604.1	1635	tagtagtgctcgggacatcattc	62150	-	transcription_regulat	-	-
12174	FLJ36040	NM_173530.1	1601	ttggcgcaaaattatacctaacc	62156	-	transcription_regulat	-	-
12175	FLJ36754	NM_173829.2	576	aagcattctctacacctaataag	62162	-	-	-	-
12176	FLJ36991	NM_152477.1	534	ttgaatcggggcattcaactgg	62169	-	transcription_regulat	-	-
12177	FLJ38499	NM_173797.2	1264	atgcagctcgtgacttttaagc	62209	-	-	-	-
12178	FLJ90396	NM_153358.1	510	tggatacggagctatttgaagc	62230	-	-	-	-
12179	FLJ90430	NM_178558.2	1573	ctggcctgaactcttctgaatc	62242	-	-	-	-
12180	FLJ90798	NM_153367.1	752	tggggcaggagtgcatcaagtc	62249	-	-	-	-
12181	GPR65	NM_003608.2	1326	aagcgaaattacacaaatgtatag	62270	-	gpcr、 receptor_activity、 apoptosis、 signal_transduction	-	-
12182	HEL308	NM_133636.1	2048	aagcgcaactatccatttggagt	62322	-	-	-	-
12183	HELIC1	NM_006828.1	4640	ctgtcctcgtatgctagtatga	62505	-	transcription_regulat	-	-
12184	HELZ	NM_014877.1	4621	agggggagcttttagatgtatcac	62699	-	-	nucleic acid binding	-
12185	HNRNP-G	NM_014469.2	894	ccgtgactacggggatcatctga	62727	-	-	-	-
12186	HRB2	NM_007043.5	186	gagcagtttgcgaacttfttcc	62731	-	-	-	-
12187	HSA9947	NM_022089.1	288	ccgaacactcgtttatcgaata	62756	-	-	-	-
12188	HSPC055	NM_014153.2	569	aagctctgtatcggaactctaag	62797	-	see also 5514 line	-	-
12189	HTF9C	NM_022727.3	1116	ctgtcggctcggcgaagtaacaagg	62867	-	-	-	-
12190	HZF12	NM_033204.2	228	ctggcctcgtcgggaatccaatg	62876	-	-	-	-
12191	IMP-1	NM_006546.2	1654	aagctcgtatggtttatcatcact	62912	-	-	-	-
12192	KARS	NM_005548.1	566	ctgcgtcggggagacataattgg	62929	-	see also 3862 line	-	-
12193	KIAA0052	NM_015360.2	735	ggccggagatgcccattgcattg	62988	-	see also 6389 line	-	-
12194	KIAA0082	NM_015050.1	748	cagtgtaagagcgtgtttgatgt	63077	-	see also 6209 line	-	-
12195	KIAA0150	NM_015117.1	1826	gagggtcctctacaagaatctct	63107	-	-	-	-
12196	KIAA0663	NM_014827.1	1812	cagttatgaacagaagaactaaag	63109	-	-	chondrosarcoma(軟骨肉腫)	-
12197	KIAA1055	NM_015079.2	1601	cagccaggagcaagcatttggtaa	63123	-	transcription_regulat	-	-
12198	KIAA1285	NM_015694.1	1568	cagtgtagggcccatcattgagg	63151	-	transcription_regulat	-	-
12199	KIAA1582	NM_018996.2	3710	aagttgcgcgcacacataccta	63224	-	-	-	-
12200	KIAA1847	NM_032527.2	1166	ggaggacacacgcggaggatagg	63245	-	-	-	-
12201	LEREPO4	NM_018471.1	360	ctgtcacacatcaagttaaattt	63250	-	-	-	-
12202	LGALS12	NM_033101.2	804	atgtggacacgcctgggtatattt	63277	-	-	-	-
12203	LGP2	NM_024119.1	225	tggagcttcagctcaccatgg	63284	-	-	-	-
12204	LKAP	NM_014647.1	969	tggtaacctcaggtttgtttaaag	63323	-	see also 5821 line	-	-
12205	LOC11325	NM_052879.3	726	aagtcataaagcgttggattgtaa	63471	-	-	-	-

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12206	LOC11550	NM_138447.1	582	tgggaaccggctgctctagatcc	63515	-	transcription_regulat	-
12207	LOC11564	NM_145326.1	310	gggacacagtagtagtaaaac	63524	-	transcription_regulat	-
12208	LOC12424	NM_144604.2	240	cagcgggtccgacagagattgg	63525	-	-	-
12209	LOC12629	NM_173480.1	781	atgggttcgcaagcttcactaga	63569	-	transcription_regulat	-
12210	LOC14654	NM_145271.2	411	aagagccaaaggccctagaaagg	63580	-	transcription_regulat	-
12211	LOC14783	NM_145276.1	1247	tcgtccagtttagttogataac	63585	-	-	-
12212	LOC16265	NM_145287.1	810	ctgacccattctcaagcttact	63594	-	-	-
12213	LOC16927	NM_173539.1	555	cagtagctggtttactctttaac	63610	-	transcription_regulat	-
12214	LOC17026	NM_173798.2	1220	gggctcccccaccagtagtgcg	63636	-	-	-
12215	LOC20151	NM_173548.1	508	ttgagagatgtacaggtatattc	63647	-	transcription_regulat	-
12216	LOC22099	NM_145312.2	680	gtgggacgcctttatgaacagt	63659	-	-	-
12217	LOC28607	NM_173831.2	619	gggaaggaagcagcttaggaag	63668	-	-	-
12218	LOC56902	NM_020143.2	378	cagatacagctttaactgaatac	63674	-	see also 7765 line	-
12219	LOC56931	NM_020175.1	433	caggagtcggctgctgaagtgtt	63684	-	-	-
12220	LOC65243	NM_023070.1	942	gagggcgaagagcttaataagatt	63701	-	transcription_regulat	-
12221	LOC81691	NM_030941.1	1121	ggggcactccttagattggatc	63745	-	-	-
12222	LOC84524	NM_032494.1	595	aagatggttaaacctaaagagaag	63781	-	-	-
12223	LOC90233	NM_138347.2	1411	tagctgcaaatcggaactcattc	63834	-	transcription_regulat	-
12224	LOC90462	NM_183238.1	589	taggactgctgacccataaatgt	63846	-	-	-
12225	LOC91120	NM_033196.1	717	ctggctctgaggtcttactaac	63879	-	-	-
12226	LOC92906	NM_138394.2	837	aagtgcaacgtattgttatattc	63900	-	-	-
12227	MADP-1	NM_033114.2	329	aagagtaaaagggttgctattat	63954	-	see also 9611 line	-
12228	MAN1	NM_014319.3	1943	gtgtgtctctcgttacctgaaa	64015	-	see also 9361 line	-
12229	MBNL2	NM_005757.3	1147	tagggacaaatcggtctattagc	64053	-	nucleic acid binding	-
12230	MBNL3	NM_018388.2	320	gagattaatggcggaacaactct	64074	-	see also 4006 line	-
12231	MDA5	NM_02168.2	441	tgtttgactcgtgggaattcgtgg	64102	-	-	-
12232	MGC10433	NM_024321.3	799	gggttggtgctggaagagaagg	64173	-	see also 8322 line	-
12233	MGC10520	NM_030580.2	1079	gagctgcgagttcatcaatcacc	64187	-	transcription_regulat	-
12234	MGC10715	NM_024325.4	661	taggtgaccagttacattcagg	64196	-	-	-
12235	MGC10871	NM_031492.2	697	atggagacactgactactataag	64212	-	-	-
12236	MGC12466	NM_033213.1	1189	gtgtaagctggtttactcttcc	64224	-	transcription_regulat	-
12237	MGC13105	NM_032497.1	657	gggtggttgacaaattactctca	64226	-	transcription_regulat	-

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12238	MGC17986	NM_153608.1	882	aggcaccagcgggaatccattgg	64273	-	transcription_regulat	-
12239	MGC2474	NM_023931.2	536	gcgtggggttgcgtctctcc	64283	-	transcription_regulat	-
12240	MGC26914	NM_144976.1	768	tcgcccaagtatttattcagatac	64290	-	transcription_regulat	-
12241	MGC27016	NM_144979.2	141	aagttgaactggtattcagaat	64294	-	-	-
12242	MGC32104	NM_144684.1	1363	aggccttcaagcccatcttgttaa	64372	-	transcription_regulat	-
12243	MGC33637	NM_152596.2	455	tggctctcgatctactccatca	64384	-	-	-
12244	MGC4054	NM_024341.1	678	gagcaacactcaacgaatgaat	64424	-	transcription_regulat	-
12245	MGC41917	NM_153231.2	1127	tagcaatagagccacactaattc	64444	-	-	-
12246	MGC42415	NM_153363.1	849	ttgcattgttcacaaacacac	64451	-	-	-
12247	MGC43537	NM_178544.2	1269	agggtacaacagacatattagtca	64470	-	transcription_regulat	-
12248	MGC4400	NM_032679.1	1119	aagtgcggctcaatagacatca	64497	-	transcription_regulat	-
12249	MGC45380	NM_133466.1	1360	tagccgtggttatcatcttattc	64521	-	transcription_regulat	-
12250	MGC45586	NM_152603.2	754	ggggagggcctgattacacatagt	64541	-	transcription_regulat	-
12251	MGC48625	NM_182609.1	472	cagcctgtgggactatgatgtaa	64556	-	transcription_regulat	-
12252	MKI67IP	NM_032390.3	187	gtgcgcacactacctaactact	64568	-	transcription_regulat	-
12253	MKRN2	NM_014160.3	839	ttgcaatcacacgtactgttgt	64596	-	-	nucleic acid binding
12254	MKRN3	NM_005664.1	1423	cagcgcatctggcactcaacttg	64614	-	-	nucleic acid binding
12255	MNAB	NM_018835.1	2113	tagacttctgtgggatttctca	64679	-	-	-
12256	MSI2	NM_138962.2	330	atgagagatcccaactacgaaacg	64711	-	see also 9643 line	-
12257	MYEOV	NM_138768.1	794	caggactctgttctcatgttca	64718	-	-	-
12258	NARS	NM_004539.2	416	gtgaagattgtggttagaagg	64735	-	see also 3095 line	-
12259	NPM2	NM_182795.1	367	aggctgttcttctacagatttg	64769	-	-	-
12260	NPM3	NM_006993.1	230	gggagccaagaacagagtgtaatg	64780	-	-	nucleic acid binding
12261	NUPL2	NM_007342.1	1253	ttggtagtccgggtcacattct	64799	-	receptor_activity	-
12262	PCTAIRE2							
12262	BP	NM_014290.1	2167	aggttgacgcgatgtacacaaat	64864	-	see also 5597 line	-
12263	PDIP46	NM_032311.3	145	gcggcgaaggagcggttaatgc	64884	-	see also 9152 line	-
12264	PERC	NM_133263.2	2797	aagagcgcttgaagtgttgg	64927	-	receptor_activity,	-
12265	PINX1	NM_017884.3	1061	aggacgtacactagaagaacg	64948	-	transcription_regulat	-
12266	PNMA3	NM_013364.1	398	tcgggtcggacacaaattgtcg	64963	-	see also 7170 line	-
12267	PPIL4	NM_139126.2	1374	ggggatggccattatagtaata	65011	-	-	-
						-	see also 9660 line	-

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12268	PPPIR10	NM_002714.2	683	tggtagtcgagtcgacttacttg	65019	-	transcription_regulat	-	-
12269	PRC	NM_015062.3	2749	ttgtctatggggccagctactacc	65075	-	-	-	-
12270	PRR3	NM_025263.1	452	cagacacgatgccgaacgaag	65100	-	molecular_function	unknown	-
12271	PSPC1	NM_018282.1	627	cggattcgcctcgtctacacatgg	65111	-	see also 7362 line	-	-
12272	PTBP2	NM_021190.1	127	cagtagtcgaactcctaatatga	65137	-	see also 8123 line	-	-
12273	RAD52B	NM_145654.2	219	tggtttctgcgcgtcattgaat	65275	-	-	-	-
12274	RAVER1	NM_133452.1	340	ccgagggcgcgaatcaatgctttc	65297	-	-	-	-
12275	RBAK	NM_021163.2	2628	aggaaatatgaacgtacttgatg	65326	-	transcription_regulat	-	-
12276	RBM14	NM_006328.1	2027	gggtcctataatgattactctgc	65351	-	see also 4430 line	-	-
12277	RECQL4	NM_004260.1	1038	ccgcatgacaggggcaattacg	65355	-	DNA helicase	osteosarcoma(骨髄性骨肉腫)、Rothmund-	-
12278	RECQL5	NM_004259.3	1144	caggtttgtcgcccatgggaata	65376	-	DNA helicase	Thomson syndrome(ロートムンド・トムソン症候	-
12279	RIG-I	NM_014314.2	1459	ttgatgcgtcagtagtagcaaca	65424	-	see also 5617 line	-	-
12280	RNASE2	NM_002934.1	184	ttgaacccacagcatcaaatatg	65470	-	hematopoietic-associated factor	1A complex	-
12281	RNASE3	NM_002935.1	366	tagattccgggtgcttactcc	65486	-	toxin	-	-
12282	RNASE4	NM_002937.3	709	gtgatcgtactgcaacttgatg	65491	-	-	-	-
12283	RNASE6	NM_005615.2	695	gagcgatccccctacaaagtgg	65505	-	pancreatic	ribonuclease	-
12284	RNASE8	NM_138331.1	155	cagccatgagcatcatcaataag	65510	-	-	-	-
12285	RNPC4	NM_018107.3	341	tcgggagacacgaacatcgtagt	65516	-	-	-	-
12286	RNPC6	NM_153020.1	624	ctgcagacagaccgaatgaata	65547	-	-	-	-
12287	RoXaN	NM_017590.4	711	gcgagttcgaaggcgtataaga	65557	-	-	-	-
12288	RSN	NM_002956.2	4415	ctgcaatgacgacgaacacctct	65642	-	see also 1994 line	-	-
12289	RY1	NM_006857.1	401	atgcctatgccataaagtctct	65644	-	see also 4804 line	-	-
12290	SART3	NM_014706.2	1104	ctgtacataaacgcgctattaga	65663	-	-	-	-
12291	SBN01	NM_018183.2	3260	aagatcgctcggggaattcttact	65802	-	-	-	-
12292	SBZF3	NM_020394.2	480	gagaaattacgcttaaggaatga	65854	-	transcription_regulat	-	-
12293	SECP43	NM_017846.3	610	cagcagtagccagaactactatgc	65918	-	-	-	-
12294	SFRS12	NM_139168.1	1640	acgttaacgcttatgagaaga	65949	-	see also 9672 line	-	-
12295	SHARP	NM_015001.2	419	gagacctacgcacgggatataat	65962	-	see also 6175 line	-	-
12296	SLAHBP1	NM_014281.3	402	gcgtctacgtgggctctctac	66147	-	see also 5589 line	-	-
12297	SLM1	NM_152688.1	1101	tggctacgggggtgaatatgatg	66157	-	-	-	-
12298	SND1	NM_014390.1	2637	cagcgtagttcgggatatacaga	66213	-	see also 5650 line	-	-
12299	SPF45	NM_032905.3	1238	tagaattgagagagtggaatca	66244	-	see also 9342 line	-	-
12300	SRP46	NM_032102.1	852	cagctaatctggttacagtaact	66247	-	-	-	-
12301	SRp35	NM_080743.2	230	tggccctatagtagacgtttaca	66252	-	-	-	-
12302	SSX4	NM_005636.3	92	aggagtagtctcaaatatcaga	66279	-	transcription_regulat	-	synovial sarcoma(滑膜肉腫)

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12303	STK31	NM_031414.2	1205	tggatgaagggtgctttactact	66312	-	see also 9015 line	-	-
12304	SZF1	NM_016089.1	1212	tggcggaggctttagttgagt	66382	-	-	-	-
12305	T54	NM_015698.3	1115	atgtacaaaggaggccaatatta	66401	-	-	molecular_function	unknown
12306	TDRD1	NM_198795.1	953	agggtacoggttaccgaattcaaa	66427	-	-	-	-
12307	TDRD3	NM_030794.1	1387	gtgatagacogtattctagatat	66558	-	see also 8950 line	-	-
12308	TDRD4	NM_019038.2	1472	tggcgctgtcagagcacatatt	66625	-	-	-	-
12309	TDRKH	NM_008862.2	599	cggcgagacaattcgtctctatct	66669	-	-	-	-
12310	TFIP1	NM_012143.1	2674	ttggcgcgattgtgatcacatc	66747	-	-	protein binding	-
12311	THOC4	NM_005782.1	59	tggacacacatcataaactgaac	66750	-	-	-	-
12312	TIPARP	NM_015508.2	1324	gagtatcccgagctgtctcattcg	66790	-	see also 6442 line	-	-
12313	TNRQ6	NM_014494.1	5324	cagcggagaccgatcacaactact	66924	-	see also 5711 line	-	-
12314	TOE1	NM_025077.2	1522	gtgtctcagttctcacgatattg	66964	-	transcription_regulat	-	-
12315	TRAF6	NM_004620.2	1154	gaggtgctcgttgaagacaaga	67013	-	or	-	-
12316	TRF4-2	NM_022447.1	431	atggacgacacttcaattattta	67039	-	see also 3136 line	-	-
12317	TRIM56	NM_030961.1	1929	tagcgcacggctctatctcatca	67058	-	-	-	-
12318	UISNRNP					-	-	-	-
12318	BP	NM_007020.2	956	gagagcgtgcgtgatcaaaagc	67071	-	-	-	-
12319	UNKL	NM_024023.1	1651	gtgcgcgtcacagggttttatgt	67099	-	-	-	-
12320	USP6	NM_004505.1	1803	ctgagcccggtggaatacaacagc	67107	-	-	ubiquitin C-terminal hydrolase	Ewing's sarcoma(ニューイング肉腫)
12321	ZC3HAV1	NM_020119.3	1943	aagggtgtcgcgttaattgtag	67191	-	-	-	-
12322	ZC3HDC1	NM_022750.1	1793	aagcaacactacagtagtagatt	67256	-	-	-	-
12323	ZOCHO2	NM_017742.2	764	atgggcttaccatgcaatatct	67287	-	-	-	-
12324	ZOCHO5	NM_152694.1	304	aggacttagcagcctctctatatt	67324	-	-	-	-
12325	ZNF183L1	NM_178861.3	720	ttagagagggtcgctactgtatc	67378	-	-	-	-
12326	ZNF2	NM_021088.1	1462	ctggggaccctcgctatcagttg	67386	-	transcription_regulat	-	-
12327	ZNF227	NM_182490.1	1204	cagtagcagcaccgggtttatca	67400	-	or	-	-
12328	ZNF248	NM_021045.1	1293	tggaaatggagccggtatggatgc	67433	-	transcription_regulat	-	-
12329	ZNF350	NM_021632.2	1457	atgtgtgtctgtgttaagcataa	67454	-	or	-	-
12330	ZNF354B	NM_058230.1	1024	gtgcatccctttgtaagcattta	67467	-	transcription_regulat	-	-
12331	ZNF354C	NM_014594.1	1297	acgtatgttaacccttctgcgac	67487	-	or	-	-
12332	ZNF415	NM_018355.2	762	gagtcggacaagaagccttgatca	67500	-	-	-	-
12333	ZNF426	NM_024106.1	1550	ttgggtatccctcatgtcttaaat	67526	-	transcription_regulat	-	-
12334	ZNF454	NM_182594.1	950	cagagtagcacccttatcatca	67537	-	or	-	-



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12335	ZNF471	NM_020813.1	1545	atgtacacacctgttagtcatttg	67553	-	transcription_regulat	-
12336	ZNF514	NM_032788.1	728	ttgtgatgccagtgtagatgc	67565	-	transcription_regulat	-
12337	ZNF75A	NM_153028.1	918	atggatcgctcaagaagaattg	67581	-	-	-
12338	ZNF77	NM_021217.1	491	gagttaccctaccgaagctaaac	67588	-	transcription_regulat	-
12339	ZNF92	NM_007139.2	902	cagttctgattcttaataaaca	67605	-	transcription_regulat	-
12340	13CDNA73	NM_023037.1	5470	ctggcgcttcacatcaattat	67746	-	see also 8545 line	-
12341	AAK1	NM_014911.2	715	acgtgagtagcgggtgatgtgg	67853	-	kinase_related	-
12342	AARSL	NM_020745.1	2252	gtgggaagcaccctgttactgtact	67914	-	-	-
12343	ABCA1	NM_005502.2	3457	cggggagctcaagggtgtcattc	67973	-	see also 3842 line	-
12344	ABCA10	NM_080282.2	3266	aagtaactctgtgaactcattgt	68089	-	kinase_related	-
12345	ABCA12	NM_015657.3	5692	cagtcggtctctagactcttaaa	68289	-	see also 6534 line	-
12346	ABCA13	NM_152701.2	12090	gagaaggtctacgactcatttc	68687	-	-	-
12347	ABCA2	NM_001606.2	1595	gtgggcaacgtgactcactatgc	68766	-	see also 1067 line	-
12348	ABCA3	NM_001089.1	1027	cagttacacacggagaaattaca	68807	-	ATP-binding cassette (ABC) transporter	-
12349	ABCA4	NM_000350.1	867	cagccgttctcaagggtatcaatc	68851	-	see also 291 line	-
12350	ABCA5	NM_018672.2	5754	atgtatcggaacagtagacaacatc	69087	-	see also 7544 line	-
12351	ABCA6	NM_080284.2	4342	gagctcgccatcgcaagattag	69199	-	-	-
12352	ABCA7	NM_019112.2	5059	atgtgtgtcactcgctcataaac	69220	-	-	-
12353	ABCA8	NM_007168.1	2565	aagggttcgttgttaagttaa	69288	-	see also 4971 line	-
12354	ABCA9	NM_080283.2	2942	gagcgacagacaacatagctatag	69403	-	see also 9513 line	-
12355	ABCB1	NM_000927.2	932	gagcttaacaccccgactcacaga	69444	-	see also 604 line	-
12356	ABCB10	NM_012089.1	1097	cagctagctgaggaacgtattgg	69523	-	-	-
12357	ABCB11	NM_003742.2	1353	tggttacaaagttggatcgatca	69579	-	see also 2554 line	-
12358	ABCB4	NM_000443.2	3643	ctgtctacgggtccgaatgcaga	69705	-	see also 350 line	-
12359	ABCB5	NM_178559.3	503	gcgacattatagagaccatttg	69768	-	-	-
12360	ABCB6	NM_005689.1	2033	cagaaggccgctattgagttga	69839	-	see also 3949 line	-
12361	ABCB7	NM_004299.2	1269	gtggcaggctacccttactgttgg	69880	-	heme transporter	-
12362	ABCB8	NM_007188.2	483	gggtggcgacactcgtgaattgac	69923	-	ATP-binding cassette (ABC) transporter	-
12363	ABCB9	NM_019624.1	1879	cagcgctacgaccacaagttact	69956	-	see also 7732 line	-
12364	ABCC1	NM_004996.2	3159	ccgcgctggcttccaactattgg	69991	-	see also 3489 line	-
12365	ABCC10	NM_033450.2	1710	ggcgagctacgggtacatcaata	70017	-	see also 9427 line	-
12366	ABCC11	NM_032583.2	903	gtgtatggaccacttagtactga	70056	-	-	-
12367	ABCC12	NM_033226.1	997	tggcagggtgtccaatactactgt	70117	-	see also 9384 line	-
12368	ABCC13	NM_138726.2	597	aagaaccatctctactctatgc	70207	-	-	-
12369	ABCC2	NM_000392.1	321	cagtcctctgttctgataacc	70234	-	see also 311 line	-
12370	ABCC3	NM_003786.2	2347	cagtcgctcgagctgtttaca	70337	-	-	-

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12371	ABCC4	NM_005845.2	2848	ctggaccatccggggcacaagaag	70451	-	channel	ATP-binding cassette (ABC) transporter	-
12372	ABCC5	NM_005688.1	4301	aggctcagatgattatgtgc	70575	-	see also 3945 line	-	-
12373	ABCC6	NM_001171.2	1858	ctggtgtgtagactcaagtcc	70589	-	-	translation	-
12374	ABCC8	NM_000352.2	2396	cagcagccagcttgatatacagg	70623	-	receptor activity	sulfonylurea receptor	diabetes mellitus(糖尿病)、diabetes(糖尿病)
12375	ABCC9	NM_005691.1	1397	ttgcgcgaattcagactattt	70683	-	see also 3953 line	-	-
12376	ABCD1	NM_000033.2	1351	tggaaagcctgtggatgtatg	70784	-	see also 5 line	-	-
12377	ABCD2	NM_005164.2	1816	ctgctgagtgtaacaattgtt	70845	-	see also 3628 line	-	-
12378	ABCD4	NM_005050.1	93	caggttagatctgcaattcttc	70948	-	see also 3525 line	-	-
12379	ABCE1	NM_002940.1	317	ttggcgccttataaattgtcaat	70987	-	see also 1974 line	-	-
12380	ABCF2	NM_005692.3	1231	aggctcgtgagcgataagacact	71028	-	see also 3956 line	-	-
12381	ABCF3	NM_018358.1	135	cggagcaggttcccgaaatga	71046	-	see also 7412 line	-	-
12382	ABCG1	NM_004915.2	809	aaggggctcgtccatcatcttc	71078	-	-	-	-
12383	ABCG2	NM_004827.1	1917	cagcattccacgatatgattta	71138	-	-	xenobiotic-transporting	-
12384	ABCG4	NM_022169.2	370	aaggggcagatcctgttaattg	71154	-	see also 8326 line	-	-
12385	ABCG5	NM_022436.2	962	tggcacgccagcggaatgcttg	71168	-	-	molecular function unknown	Sitosterolemia(-), atherosclerosis(粥状硬化症)
12386	ABCG8	NM_022437.2	1291	acgctgacgtcgtcagatttc	71211	-	see also 8356 line	-	-
12387	ABL2	NM_005158.2	2496	tggagatcagccattacagaga	71284	-	kinase related	-	-
12388	ACACB	NM_001093.1	6822	aaggatcgatccagcttacaaga	71548	-	-	Transcription factor E2-alpha	-
12389	ACK1	NM_005781.2	831	acgcaagtcgtgagtgatgaagg	71555	-	kinase related, signal transduction	-	-
12390	ACLY	NM_001096.2	1271	gagcacgaagtcacactcttgt	71582	-	see also 682 line	-	-
12391	ACVR1	NM_001105.2	824	gtggagatggcactatcgaaagg	71611	-	see also 686 line	-	-
12392	ACVR1B	NM_004302.3	1253	atgcctcgggctgttatattg	71651	-	receptor activity, kinase related, signal transduction	-	-
12393	ACVR1C	NM_145259.1	1664	ctgctcttgatttaagaagact	71684	-	receptor activity, kinase related	-	-
12394	ACVR2	NM_001616.2	786	aagccagtgcttaacgaatat	71718	-	see also 1070 line	-	-
12395	ACVR2B	NM_001106.2	935	gaggcccaagacggtctattgc	71744	-	see also 687 line	-	-
12396	ACVRL1	NM_000020.1	1006	gagactgagatctataacacagt	71754	-	receptor activity, signal transduction	transforming growth factor-beta receptor	Rendu-Osler-Weber disease(ランデュー・オスラー・ウェーバー病)、hereditary hemorrhagic telangiectasia(遺伝性出血性毛細血管拡張症)
12397	ADRBK1	NM_001619.2	956	gaggctgacatgcctctatgc	71770	-	kinase related, gpcr	G-protein coupled receptor kinase	-
12398	ADRBK2	NM_005160.2	448	tagaacagctacaagacttcta	71783	-	see also 3627 line	-	-
12399	AFG3L1	NM_001132.1	892	atgcggcctggccggtttcatcg	71829	-	-	metallopeptidase	-
12400	AFURS1	NM_024524.2	3343	cagagctattccggttaattg	71876	-	-	-	-
12401	AK1	NM_000476.1	550	csgtatcgccctctatgagaaa	71896	-	kinase related	adenylate kinase	hemolytic anemia(溶血性貧血)

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12402	AK3L1	NM_016282.2	535	ccgcagtgccgagtgatataac	71913	-	see also 6779 line	-	
12403	AK5	NM_012093.2	2610	ctgcacagctattgactctattt	71959	-	kinase related	-	
12404	AKT2	NM_001626.2	291	aagagcagcgcctctctcattgg	71966	-	see also 1078 line	-	
12405	ALS2CR2	NM_018571.4	1223	tagccattggatcatcagttatt	72021	-	see also 7527 line	-	
12406	ALS2CR7	NM_139158.1	282	aaggctcttatcgacacagttac	72025	-	kinase related	-	
12407	AMHR2	NM_020347.1	138	cagggaacctgtgtttctttg	72049	-	see also 7900 line	-	
12408	ANKK1	NM_178510.1	1118	cagctctccgaccgtaagaattt	72074	-	kinase related	-	
12409	ANKRD3	NM_020639.1	1411	aagtggctctgtctcaacatgc	72091	-	kinase related	protein tyrosine kinase	-
12410	APAF1	NM_001160.2	1215	aagaccgtctccgcttctgatg	72111	-	see also 734 line	-	
12411	APQ-1	NM_014278.2	420	tagtcaagaaagtaagaataca	72220	-	see also 5577 line	-	
12412	ARAF1	NM_001654.1	256	gggcaccgtcaagatacactgc	72293	-	see also 1094 line	-	
12413	ARK5	NM_014840.1	2131	atgcctctcgatggtttcgatca	72324	-		protein tyrosine kinase	-
12414	ASNA1	NM_004317.1	639	ccgctcagtcagcgaacagttca	72347	-		arsenite-transporting	-
12415	ASS	NM_000050.2	553	ctgatggagtagcgaagcaaca	72352	-		-	citrullinuria(シトルリン尿症)
12416	ATP10A	NM_024490.2	923	aggtttcgcggctgcatacata	72359	-	see also 8619 line	-	
12417	ATP10D	NM_020453.2	2347	cagaagaagcggccttagtgtat	72469	-		plasma membrane cation-transporting ATPase	Alzheimer disease(アルツハイマー病)
12418	ATP12A	NM_001676.2	867	aggggtctcgggtggataactca	72525	-		plasma membrane cation-transporting ATPase	-
12419	ATP1A1	NM_000701.5	1976	atgtgaatttcctctatcgataat	72612	-		sodium/potassium-exchanging	-
12420	ATP1A2	NM_000702.1	1350	tggacggccctgtctcgaattgc	72633	-	see also 431 line	-	
12421	ATP1A3	NM_152296.2	235	aggtctgcgggaatacaacaca	72646	-	see also 9834 line	-	
12422	ATP1A4	NM_144699.1	3019	ctggtgaaccaccgctctcatgg	72670	-		-	-
12423	ATP2A2	NM_001681.2	566	aagagtgtagcgggattaaagc	72716	-	see also 1102 line	-	
12424	ATP2A3	NM_005173.2	1018	gcgtggcgtgtgtactacttca	72784	-		-	-
12425	ATP2B1	NM_001682.1	3592	aagaagttgattcacaacttta	72907	-		plasma membrane cation-transporting ATPase	-
12426	ATP2B3	NM_021949.1	1341	gtgcacgccgctctatgtacaa	72947	-		plasma membrane cation-transporting ATPase	-
12427	ATP2C1	NM_014382.1	2351	cagctgagcagcagtagacagc	73027	-	see also 5642 line	-	
12428	ATP4A	NM_000704.1	2011	gtgccgtgagcaccaggttaacg	73069	-	see also 433 line	-	
12429	ATP5A1	NM_004046.3	674	cagcgtgaactgattattgttga	73092	-		hydrogen-transporting two-sector ATPase	-

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12430	ATP5B	NM_001686.2	800	aagtagcgcctggtatgtgca	73127	-	channel	hydrogen- translocating F- type ATPase	-
12431	ATP6AP1	NM_001183.3	949	ctgacatataaacgactctttgg	73153	-	-	hydrogen- transporting two- sector ATPase	-
12432	ATP6V1A	NM_001690.2	565	atgttaccacccacgaacagagg	73179	-	see also 1107 line	-	-
12433	ATP6V1B1	NM_001692.2	1540	ccgtgatcgcagaggtctattcc	73243	-	-	hydrogen- translocating V- type ATPase	renal tubular acidosis(腎尿細管性アシドーシス)
12434	ATP6V1B2	NM_001693.2	1234	gggagaacgcctcgtactactca	73269	-	see also 1110 line	-	-
12435	ATP6V1C2	NM_144583.1	102	aagtcacactgtcttataatcc	73332	-	see also 9706 line	-	-
12436	ATP6V1H	NM_015941.1	495	cagaccgttcagttataactaac	73361	-	see also 6582 line	-	-
12437	ATP7A	NM_000052.1	3772	aggtcggactcgtgtattagtag	73498	-	see also 21 line	-	-
12438	ATP7B	NM_000053.1	3624	gagcgcgaacgggttaacacatt	73587	-	see also 26 line	-	-
12439	ATP8A1	NM_006095.1	1163	ctgtatgctcgaacatctaat	73630	-	see also 4236 line	-	-
12440	ATP8A2	NM_016529.3	2434	gtgtatgctcaccgactattta	73762	-	see also 6904 line	-	-
12441	ATP8B1	NM_005603.1	2758	atgtcagtgactatctcttggc	73869	-	-	plasma membrane cation-transporting ATPase	benign recurrent intrahepatic cholestasis(肝内胆 汁うっ滞), familial intrahepatic cholestasis(家族 性肝内胆汁うっ滞), intrahepatic cholestasis(肝内胆汁鬱滞), Alzheimer
12442	ATSV	NM_004321.3	1585	gcggcaccttggcgtattctct	73903	-	see also 2893 line	-	-
12443	AURKB	NM_004217.1	240	cagtggaacacccgacatcttaa	73928	-	kinase_related, cell_cycle	-	-
12444	AURKC	NM_003160.1	670	cagcgacagccacgataataga	73946	-	kinase_related, cell_cycle	-	-
12445	AXL	NM_001699.3	1857	aagaaggagacccgttatggaga	73957	-	see also 1112 line	-	-
12446	BCKDK	NM_005881.1	1224	tggaggaatcgctcacaagatc	73982	-	see also 4092 line	-	-
12447	BCS1L	NM_004328.3	933	cagacgtggctacctgctttatg	74000	-	see also 2896 line	-	-
12448	BLK	NM_001715.2	1177	agggccctggtcagcactattct	74011	-	protein tyrosine kinase	-	-
12449	BMP2K	NM_017593.3	1368	cttgtgaattcggtaaccataga	74064	-	see also 7045 line	-	-
12450	BMP1A	NM_004329.1	658	cagtaocccggacaatagaatg	74102	-	see also 2897 line	-	-
12451	BMP1B	NM_001203.1	1498	gagattgctaggagatgtgtatc	74141	-	receptor_activity, signal_transduction kinase_related	transforming growth factor-beta receptor	Alzheimer disease(アルツハイマー病), Aarskog- Scott syndrome(Aarskog-Scott症候群)
12452	BMP2	NM_001204.4	1221	ctgattggccggaggtcgatgg	74169	-	see also 788 line	-	-
12453	BMS1L	NM_014753.1	1742	cagctctcccccactttcgattct	74252	-	-	-	-
12454	BMX	NM_001721.3	700	tagccaatatgacaacgaatca	74270	-	kinase_related	signal transducer	-
12455	BRAF	NM_004333.2	588	cagtcgagagcagctctaaagaaa	74313	-	kinase_related, apoptosis	receptor signaling protein	melanoma(メラノーマ)
12456	BTB	NM_000061.1	1147	aggggtgatacgtcattatgttg	74387	-	see also 36 line	-	-
12457	BUB1	NM_004336.1	676	aagagtgatcacgattcttaaat	74412	-	see also 2898 line	-	-

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12458	BUB1B	NM_001211.3	417	gagagtaaatatgtcaacgattatt	74485	-	kinase_related, cell_cycle	protein serine/threonine kinase	-
12459	C14orf127	NM_025152.1	237	ttgcactagcagcgagcattctg	74556	-	-	-	-
12460	C14orf131	NM_018335.1	1126	ttgtccctccaggacacattagt	74599	-	-	-	-
12461	C14orf20	NM_174944.1	1134	cagctccacacacacacacacac	74608	-	kinase_related	-	-
12462	C20orf23	NM_017683.1	1610	atgcttccacgagcagacattatt	74651	-	-	-	-
12463	C20orf64	NM_033550.2	562	atgcttccaaactgtcttatatg	74712	-	kinase_related	-	-
12464	C20orf97	NM_021158.2	598	gagttggatgacaaacttagatag	74721	-	kinase_related, apoptosis	-	-
12465	C6orf199	NM_145025.2	918	ttgtatggatgcacttaaatat	74740	-	kinase_related	-	-
12466	C8FW	NM_025195.2	1614	cgggtacatogactcagaataag	74757	-	kinase_related	-	-
12467	CACNA1B	NM_000718.1	4513	ccggcagctgtccagataaga	74790	-	see also 435 line	-	-
12468	CAD	NM_004341.2	5393	aggagaggttgctctatctgatg	74902	-	-	dihydroorotase	-
12469	CAMK1	NM_003656.3	572	ctgcatgacactggcgattgtaca	74917	-	kinase_related, signal_transduction	calmodulin- dependent protein kinase I	-
12470	CAMK1D	NM_020397.1	296	tagccgtctgagaagaagattaag	74927	-	kinase_related	-	-
12471	CAMK1G	NM_020439.1	405	caggtctgtcggcgagtgaaata	74955	-	kinase_related	-	-
12472	CAMK2A	NM_015981.2	394	gggacacactaacctgactctcg	74970	-	see also 6591 line	-	-
12473	CAMK2B	NM_001220.3	399	ccgcctctgaagcattccaaca	74985	-	see also 800 line	-	-
12474	CAMK2D	NM_001221.2	1778	atccgctctgactagcatatt	75020	-	see also 801 line	-	-
12475	CAMK2G	NM_001222.2	593	tggcctagccatccgaagtacagg	75038	-	see also 803 line	-	-
12476	CAMK4	NM_001744.3	216	gggatgogctgagcgattttcto	75051	-	see also 1154 line	-	-
12477	CAMKK1	NM_032294.2	303	ctgtgatccctggcgacttcca	75080	-	see also 9146 line	-	-
12478	CAMKK2	NM_006549.3	1723	aggcatcgagtgacttacactacc	75102	-	kinase_related, transcription_regulat or	-	-
12479	CARD12	NM_021209.3	2027	cagggaacatcccogattactta	75154	-	apoptosis	apoptosis regulator	-
12480	CARD15	NM_022162.1	582	gggtttcgtcagccagtgatgaat	75187	-	see also 8318 line	-	-
12481	CARD4	NM_006092.1	2332	ccgcgttcaggtcgaaagattcca	75229	-	apoptosis, signal_transduction	tropomyosin binding	-
12482	CARK	NM_015978.1	562	ttgcattatgcagcgactactagg	75264	-	kinase_related	-	-
12483	CASK	NM_003688.1	98	gtgtgtacgacgagtgatcaac	75317	-	see also 2506 line	-	-
12484	CCRK	NM_012119.2	808	gggcaagaacgatattgaacagc	75403	-	kinase_related	-	-
12485	CC72	NM_006431.1	542	ttcggggcacacattactcca	75424	-	cell_cycle	chaperone	-
12486	CGT3	NM_005998.2	174	cagatatcatccgaacatgtttg	75434	-	-	chaperone	-
12487	CGT4	NM_006430.2	1440	gagttggccctacgattaaactga	75504	-	see also 4500 line	-	-
12488	CGT5	NM_012073.2	535	cagcgatagcgtctctgttgaca	75531	-	-	chaperone	-
12489	CGT6A	NM_001762.2	1527	aagtaggcgtatgggataactat	75574	-	-	chaperone	-
12490	CGT6B	NM_00584.1	381	ctgcacccatagaataatagctga	75583	-	-	protein transporter	-
12491	CGT7	NM_006429.1	613	cagtgatgatctcgatgtttg	75627	-	cell_cycle	chaperone	-
12492	CGT8	NM_006585.1	885	ctgtgtcaaatgtcgtagtaaca	75678	-	-	chaperonin ATPase	-

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12493	CDK2	NM_001786.2	656	tgggtaoagctgctgtaact	75723	kinase_related, cell_cycle	-	-
12494	CDK2L5	NM_003718.2	2730	aagtcggcgtataactaagaagg	75779	kinase_related	-	-
12495	CDK42BP	NM_003607.2	4748	gtgatctcaggacgaatgtca	75942	kinase_related	-	-
12496	CDK42BP	NM_006035.2	2733	aagtcagattgcggaaatcatt	75996	see also 4206 line	-	-
12497	CDK6	NM_001254.2	1142	tgggtgctgattggtattgctaatt	76053	cell_cycle, kinase_related	E2F-4/DP-1 complex	-
12498	CDK7	NM_003503.2	1344	ttgcttagtgagcagatccatt	76111	see also 2360 line	-	-
12499	CDK10	NM_003674.2	980	coggagcagcgcctacaacaacc	76128	kinase_related, cell_cycle	-	-
12500	CDK2	NM_001798.2	689	tggagtcctgttgctactaca	76134	see also 1175 line	-	-
12501	CDK3	NM_001258.1	612	tgggcagcaagttctataccaca	76143	kinase_related, cell_cycle	cyclin-dependent protein kinase	-
12502	CDK4	NM_000075.2	246	gagccagtggtgaattggtgt	76145			Well-differentiated liposarcoma(高分化型脂肪肉腫)、rhabdomyosarcoma(胞巣状横紋筋肉腫)、ependymoma(上糸細胞腫)、liposarcoma(脂肪肉腫)、chondrosarcoma(軟骨肉腫)、osteosarcoma(骨髄性骨肉腫)、Ewing's sarcoma(ユーンゲ肉腫)、melanoma(メラノーマ)、dysplastic nevus syndrome(デイスプラスチック・ニューバース症候群)、nerve sheath tumors(神経鞘腫瘍)、astrocytic tumors(星状腫瘍)
12503	CDK5	NM_004935.2	681	atgtcatgaccagttgaagagg	76169	kinase_related, cell_cycle	protein tyrosine kinase	Alzheimer disease(アルツハイマー病)
12504	CDK6	NM_001259.2	606	tccgcttgccgcctctatagt	76179	see also 819 line	-	-
12505	CDK7	NM_001799.2	575	ggggagccccaatagagcttatac	76204	kinase_related, transcription_regulat or, cell_cycle	cyclin-dependent protein kinase	-
12506	CDK8	NM_001260.1	979	tggacccaataaagcgaattacc	76251	kinase_related, cell_cycle, transcription_regulat or	protein serine/threonine kinase	-
12507	CDK9	NM_001261.2	855	tggccaaacgtggacaactatga	76274	transcription_regulat or, kinase_related, cell_cycle	cyclin-dependent protein kinase	-
12508	CDKL1	NM_004196.3	486	ctggaccgagtgactactatata	76285	kinase_related, cell_cycle	cyclin-dependent protein kinase	-
12509	CDKL2	NM_003948.2	1665	ggggactgagactataccaattc	76348	kinase_related, signal transduction	-	-
12510	CDKL3	NM_016508.2	498	tagagctcccggaattagattaa	76367	-	-	-
12511	CDKL5	NM_003159.1	1613	gagtcgcatagctatattgaca	76433	kinase_related	protein kinase CK2	infantile spasm(点頭てんかん)
12512	CENPE	NM_001813.1	5573	atgaacatacaactattactgta	76574	-	kinetochore motor	-
12513	CFTR	NM_000492.2	1174	atggcgtcactcgccaattcc	76667	see also 384 line	-	-
12514	CGI-04	NM_015936.1	1265	tgatcccgagagatcgaatga	76793	-	-	-

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12515	CGI-152	NM_020410.1	441	cagctctttacgtcatcatgc	76812	-	see also 7866 line		
12516	CHEK1	NM_001274.2	1148	cagccctcatcatgataaat	76866	-	see also 840 line		
12517	CHEK2	NM_007194.2	1030	ctgcccctctggcctcgattatgg	76882	-	see also 4996 line		
12518	CIT	NM_007174.1	4713	tgggtcaccgccttagaatcagt	77080	-	see also 4975 line		
12519	CLK1	NM_004071.1	359	tagtagcgcgtacattgatgagt	77110	-	kinase related, cell cycle	protein serine/threonine kinase	-
12520	CLK2	NM_001291.1	331	gtgtatgaccggcgatactgtgg	77152	-	kinase related	-	-
12521	CLK3	NM_001292.1	245	gogccgtgacagcgatcacatacc	77165	-	kinase related	-	-
12522	CLK4	NM_020866.1	207	cggagagatcgttgacgaataca	77181	-	see also 7912 line		
12523	CLPX	NM_006660.3	976	ctggcacaaacccctgactaaatg	77237	-	see also 4706 line		
12524	GNK	NM_004073.1	174	cagcgctacgtctgcaaatgca	77272	-	see also 2743 line		
12525	CNTN6	NM_014461.2	1602	aggaacggagacccttagacaaa	77329	-	see also 5690 line		
12526	OPS1	NM_001875.2	3834	tgttcattcaacgtccaatttc	77468	-	-	carbamoyl-phosphate synthase	hyperammonemia(高アンモニア血症)
12527	CRK7	NM_016507.1	381	caggcgttccgggactactaa	77494	-	see also 6883 line		
12528	CSF1R	NM_005211.2	2377	agggctcgtactataagaacatcc	77607	-	see also 3661 line		
12529	CSNK1A1	NM_001892.3	796	agggctaaaggctgcaacaaga	77640	-	-	casein kinase I	-
12530	CSNK1D	NM_001893.3	417	aggttgccatcaagcttgatgt	77643	-	kinase related, signal transduction	-	-
12531	CSNK1E	NM_001894.4	450	cagccctcgtgactatccact	77668	-	see also 1209 line		
12532	CSNK1G1	NM_022048.1	523	gtgaccgaacattactttgaag	77685	-	see also 8248 line		
12533	CSNK1G2	NM_001319.5	228	ggagctccgctaggaaagaatct	77703	-	kinase related, signal transduction	casein kinase I	-
12534	CSNK1G3	NM_004384.1	1199	gtggctcgtgtacagttgtgaagt	77732	-	see also 2944 line		
12535	CSNK2A2	NM_001896.2	670	ttggggctgtggcagaattctatc	77756	-	see also 1210 line		
12536	CSPG4	NM_001897.2	3198	cagtatcgtggcctgtagatgagc	77765	-	-	-	melanoma(メラノーマ)
12537	CSPG6	NM_005445.2	894	agatatogaacgcgaagttaga	77807	-	see also 3793 line		
12538	DAPK1	NM_004938.1	2040	gtgtttgtgctgattatcaagaca	77935	-	see also 3434 line		
12539	DAPK3	NM_001348.1	116	acgtgagagaccattatgagatg	77976	-	kinase related, apoptosis	-	-
12540	DCAMKL1	NM_004734.1	2224	cagggcccaagccgaatagcaca	78012	-	see also 3253 line		
12541	DCK	NM_000788.1	635	atgactggatgaataaccaattt	78030	-	kinase related	deoxycytidine kinase	-
12542	DDR1	NM_001954.3	2303	acgaacccctctgcatgattact	78052	-	receptor activity, kinase related, signal transduction	-	-
12543	DDR2	NM_006182.1	1758	tgcacttaacgtcgcattcttcc	78098	-	receptor activity, kinase related, signal transduction	transmembrane receptor protein tyrosine kinase	-
12544	DDX32	NM_018180.2	1584	gtgtacaaccgagaataagagc	78145	-	-	-	-
12545	DGKE	NM_003647.1	1022	caggaacgatctatccaatata	78197	-	see also 2471 line		

12546	DKFZp434 G1418	NM_173655.1	1213	ctggtcaatagcaacttagtatg	78282	-	see also 10106 line	
12547	DKFZp434 G2226	NM_031217.2	2641	gtgttcgacaagataattcaagt	78367	-	see also 8994 line	
12548	DKFZp727 A071	NM_152268.2	378	ggagaagctctgctcgagtgataga	78371	-	-	-
12549	DKFZp761 P1010	NM_018423.1	1461	ttggtgtacctgaactgtatgc	78413	-	kinase related	-
12550	DLAT	NM_001931.2	1323	ttgcacagcgattaatgcataca	78449	-	see also 1233 line	-
12551	DMPK	NM_004409.1	1566	ctgggtgtattcgcctatgaat	78476	-	kinase related	protein serine/threonine kinase
12552	DNAH1	NM_003777.1	3753	atcggaagtaactcttataagg	78558	-	see also 2579 line	-
12553	DNAH3	NM_017539.1	8962	ctgggataccgctataactatct	79039	-	see also 7017 line	-
12554	DNAH5	NM_001369.1	13811	cagttcgaacggactgaactac	79506	-	see also 930 line	-
12555	DNAH7	NM_018897.1	5741	cagatgaactcgaataactgtt	79695	-	-	-
12556	DNAH8	NM_001371.1	1821	cagctctatgcgcgataaagtga	79942	-	see also 937 line	-
12557	DNAH9	NM_001372.2	11644	ccgaacggatgacactatgtttg	80481	-	-	-
12558	DNCH1	NM_001376.2	2392	gagagcgttcgtacctatgaacg	80578	-	see also 943 line	-
12559	DNCL2	NM_006141.2	1467	cagactctatgttaacaaactct	80838	-	-	motor
12560	DPOK	NM_025233.3	1140	ctgctcggcctcctatgaag	80848	-	see also 8886 line	-
12561	DQX1	NM_133637.1	561	ctggggcgtctgtgtactagatg	80858	-	see also 9590 line	-
12562	DTYMK	NM_012145.1	462	tggccatgagcgtatgagaacg	80901	-	kinase related, cell cycle	thymidylate kinase
12563	DYRK1B	NM_004714.1	599	tggctggagcgtctacgaaattga	80977	-	see also 3235 line	-
12564	DYRK2	NM_003583.2	318	gtgctcaagacacacacaaatgg	80989	-	kinase related	-
12565	DYRK3	NM_003582.1	945	tggtagtatgaacgttatccaca	81041	-	kinase related	protein tyrosine kinase
12566	DYRK4	NM_003845.1	1605	tggtagacgctcccaagaagta	81094	-	kinase related	protein tyrosine kinase
12567	DYT1	NM_000113.1	527	gtgcgaggtccatcttcatttt	81105	-	see also 96 line	-
12568	EGFR	NM_005228.2	2328	gtgccttcggcgaagtgataag	81167	-	receptor activity, cell cycle,	esophageal cancer(食道癌)、CNS Tumours(中枢 神経腫瘍)、squamous cell carcinoma(carcinoma)(扁平 上皮細胞癌)、astrocytic tumors(星状細胞瘤)、 squamous cell cancer(扁平上皮癌)
12569	EHD4	NM_139265.2	1055	cagcagcgtacccggaaatctaca	81204	-	signal transduction	Thyroid hormone receptor beta-2 nucleic acid binding
12570	EIF2AK3	NM_004836.2	3486	atggaaacgactgaagctataaa	81286	-	see also 3353 line	-
12571	EPB42	NM_000119.1	1443	cggtaggcgtcttctcatagatg	81300	-	-	hereditary hemolytic anemia(遺伝性溶血性貧 血)、hereditary spherocytosis(遺伝性球形赤血 球症)
12572	EPAH1	NM_005232.2	1726	ggatttagccgtcatctttgg	81326	-	see also 3668 line	-
12573	EPAH2	NM_004431.2	1535	gtggaaagtaagaggtcacttacc	81348	-	receptor activity, kinase related, signal transduction	structural constituent of cytoskeleton ephrin receptor



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12574	EPHA3	NM_005233.3	1502	ctgcggtcagcaccacactaat	81397	-	receptor_activity, signal_transduction, kinase_related	-	-
12575	EPHA4	NM_004438.2	554	gggatgtaggccattaaagcaaa	81459	-	see also 2970 line	-	-
12576	EPHA5	NM_004439.3	1581	aagagaccagctacacagattatc	81526	-	see also 2972 line	-	-
12577	EPHA7	NM_004440.2	2544	tggcctgtccagagttatagagg	81625	-	see also 2974 line	-	-
12578	EPHA8	NM_020526.2	829	gcgggacacacccaagatgtact	81646	-	see also 7887 line	-	-
12579	EPHB1	NM_004441.2	1906	caggaaacgggcttatagcaag	81680	-	see also 2980 line	-	-
12580	EPHB2	NM_004442.4	231	ctggctacggaccacagtttatcc	81694	-	receptor_activity, kinase_related, signal_transduction	-	bladder cancer(膀胱癌)、neuroblastoma(神経芽細胞腫)
12581	EPHB3	NM_004443.3	2376	gtgtgcggtggtgcactgaaca	81732	-	receptor_activity, kinase_related, signal_transduction	ephrin receptor	-
12582	EPHB4	NM_004444.3	1241	cagccaatagccactactaacacc	81742	-	receptor_activity, kinase_related, signal_transduction	ephrin receptor	-
12583	EPHB6	NM_004445.1	2744	aagtcgatcctgcttatatcaag	81774	-	receptor_activity, kinase_related, signal_transduction	ephrin receptor	neuroblastoma(神経芽細胞腫)
12584	EPBS	NM_004446.1	3665	ctgacaactcgaactattgtgt	81892	-	-	proline-tRNA	-
12585	ERBB2	NM_004448.1	3386	aagggtggtgctccgatgtattt	81940	-	receptor_activity, kinase_related, signal_transduction	receptor signaling protein tyrosine kinase	bladder transitional cell carcinoma(膀胱移行上皮癌)、cancer of the Fallopian tube(卵管癌)、breast cancer(乳癌)、Li-Fraumeni syndrome(リー・フラウメニ症候群)、lung cancer(肺癌)、osteosarcoma(骨髄性骨肉腫)、ovarian cancer(原発性卵巣癌)、prostate cancer(前立腺癌)、squamous cell
12586	ERBB3	NM_001982.1	2938	gggtacagattggctgaagtacc	82003	-	receptor_activity, signal_transduction, kinase_related	epidermal growth factor receptor	breast cancer(乳癌)
12587	ERBB4	NM_005235.1	3846	tggcggatccggccctattgttg	82119	-	receptor_activity, signal_transduction, kinase_related	epidermal growth factor receptor	-
12588	ERK8	NM_139021.1	283	cagagaacgacagggacatttac	82123	-	kinase_related	-	-
12589	FER	NM_005246.1	1598	atgcacgatcagttacatctatg	82158	-	see also 3686 line	-	-
12590	FES	NM_002005.2	1771	cagattggacgggggaacttgg	82200	-	kinase_related	protein tyrosine kinase	-

12591	FGFR3	NM_000142.2	938	cgagcggcacaccctacgtaacc	82277	-	receptor_activity, kinase_related, signal_transduction	-	bladder transitional cell carcinoma(膀胱移行上皮癌)、thanatophoric dysplasia(致死性骨異形成)、achondroplasia(軟骨形成不全症)、acrocephalosyndactyly(ワールデンブルグ症候群)、bladder cancer(膀胱癌)、craniofacial dysostosis(頭蓋顔面異骨症)、Muenke syndrome(Muenke症候群)
12592	FGFR4	NM_002011.2	1497	cggcctcgtgagctagatcac	82286	-	receptor_activity, kinase_related, signal_transduction	-	
12593	FGR	NM_005248.1	719	gaggcgatcatgtgaagcattac	82292	-	kinase_related	protein tyrosine kinase	
12594	FIGN	NM_018086.1	1663	gaggaccaaatcgtagaatttg	82342	-	see also 7237 line	-	
12595	FIGN1	NM_022116.2	376	aagaattacttcgcaattacatc	82366	-	see also 8278 line	-	
12596	FLJ10074	NM_017988.2	102	ttcggttcgtgtaaatcatta	82432	-	kinase_related	-	
12597	FLJ10326	NM_018060.2	2483	gtgtgcaatcgagagactatttc	82558	-	see also 7221 line	-	
12598	FLJ10496	NM_018114.3	1451	ctgtagcacagagatgatgac	82582	-	-	-	
12599	FLJ10514	NM_018122.3	1188	caggttgcccgatgttatcgaga	82607	-	see also 7266 line	-	
12600	FLJ10709	NM_018188.1	377	cagtcgaagctcaagagatga	82642	-	-	-	
12601	FLJ10774	NM_024662.1	1118	tggatctccaatatctttgta	82658	-	see also 8690 line	-	
12602	FLJ12118	NM_024537.1	1147	aggacgcacgtgcctacatgaag	82712	-	-	-	
12603	FLJ12528	NM_025150.3	1005	atgcactagtcgctttatcagg	82735	-	-	-	
12604	FLJ12735	NM_024857.3	5562	gagatcaacacacacgatcttact	82889	-	-	-	
12605	FLJ12969	NM_022838.1	2068	tgtgtgcaaccttttaacaagaat	82946	-	-	-	
12606	FLJ13490	NM_024942.1	1361	ctggagatacctctaagacattat	82964	-	-	-	
12607	FLJ14600	NM_032810.2	1101	aggaccttgactcggctataatg	82984	-	see also 9292 line	-	
12608	FLJ14813	NM_032844.1	837	aggacactcgccttattctagc	83014	-	see also 9309 line	-	
12609	FLJ20245	NM_017723.1	428	cggagacactcgcgaagtatcg	83063	-	-	-	
12610	FLJ20559	NM_017881.1	651	gtggccatgtatctaaagtaca	83082	-	kinase_related	-	
12611	FLJ20574	NM_017886.1	175	gcgacggaagggaacaacatcaatt	83089	-	kinase_related	-	
12612	FLJ20604	NM_017897.1	670	caggtcagcattcggatataaact	83138	-	-	-	
12613	FLJ21019	NM_024927.3	1845	ccgactccgggtggagactatgt	83166	-	-	-	
12614	FLJ22002	NM_024838.3	1645	aagttcggtaactccataaact	83215	-	see also 8780 line	-	
12615	FLJ22761	NM_025130.2	1780	gaggtcagtgcaatgtacaaca	83264	-	kinase_related	-	
12616	FLJ22865	NM_025109.3	1527	ctgatatcgcgggtgttttga	83284	-	see also 8864 line	-	
12617	FLJ22955	NM_024819.3	560	gggtaaccgctcagtgattcttg	83304	-	kinase_related	-	
12618	FLJ23074	NM_025052.1	456	gtggtacatcggatatacaagg	83312	-	kinase_related	-	
12619	FLJ23356	NM_032237.2	679	ggagtgacaacactatgcttac	83325	-	see also 9128 line	-	
12620	FLJ23441	NM_024678.3	1481	tggaccttcgtgatttgatct	83374	-	-	-	
12621	FLJ25005	NM_152334.2	1043	gtgtacagtcgggtccattaat	83390	-	-	-	
12622	FLJ25006	NM_144610.1	821	ctgtgcaactctcagtcacatgg	83437	-	kinase_related	-	
12623	FLJ31364	NM_152463.1	1643	caggaatttcctcgcagacataca	83458	-	-	-	
12624	FLJ32685	NM_152534.1	1146	ctgtgattcttcgaaatctcaaa	83481	-	kinase_related	-	

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12625	FLJ32704	NM_152572.2	1135	ctggcaccggaatctgaatcc	83489	-	kinase_related、 signal_transduction	-	-
12626	FLJ34389	NM_152649.1	1151	ctggcagcattgaatagagg	83527	-	-	-	-
12627	FLJ37300	NM_153209.1	1219	cagcagctcaagcgcaagattga	83550	-	-	-	-
12628	FLT1	NM_002019.2	723	cgggtttacgtcaccttaacatca	83563	-	receptor_activity、 signal_transduction、 kinase_related	vascular endothelial growth factor receptor	bladder cancer(膀胱癌)
12629	FLT3	NM_004119.1	2546	ttggattgctcgagatcatcgt	83730	-	see also 2784 line	-	-
12630	FLT4	NM_002020.1	1685	cagcagcttcaccatcgatcc	83757	-	receptor_activity、 signal_transduction、 kinase_related	-	-
12631	FPGS	NM_004957.2	413	cgggagcggatccgcatcaatgg	83770	-	-	folypolyglutamate synthase	-
12632	FRK	NM_002031.2	1871	aggaacgacctacatttgagaca	83822	-	-	non-membrane spanning protein	non-small-cell lung cancer(非小細胞肺癌)
12633	FTFSDC	NM_015440.3	1466	ttgtccgtgctagaaaggttaaa	83842	-	kinase_related、 cell_cycle	tyrosine kinase	-
12634	FUK	NM_145059.1	595	cggcctacgctcagaatcatgg	83864	-	see also 6417 line	-	-
12635	FYN	NM_002037.3	776	gtgtgaactcttcgtctcatcag	83874	-	kinase_related	-	-
12636	GABARAP L2	NM_007285.6	191	gcgaagattcgagcggaatatcc	83910	-	see also 1316 line	protein transporter	-
12637	GAK	NM_005255.1	1192	cagtcgctcgttaattatgcaaa	83944	-	kinase_related、 cell_cycle	protein serine/threonine kinase	-
12638	GALK1	NM_000154.1	375	tcgtgtggccaaactatgtcaagg	83973	-	kinase_related	galactokinase	-
12639	GALK2	NM_002044.1	834	caggctaaacttagggattagct	84009	-	see also 1319 line	-	-
12640	GARS	NM_002047.1	684	ctggcgttacagcccaaatga	84022	-	see also 1320 line	-	-
12641	GCK	NM_000162.2	948	gaggcagcaagaacacatcgataagg	84065	-	kinase_related	-	diabetes mellitus(糖尿病)、diabetes(糖尿病)、 maturity-onset diabetes of the young(若者の 成人発症型糖尿病)
12642	GK2	NM_033214.1	874	ctgtgtataacagggtcgttaaatg	84083	-	kinase_related	glycerol kinase	-
12643	GMPS	NM_003875.1	856	gtggagtagactcaacagttgt	84119	-	-	carbon-nitrogen ligase、with glutamine as amido-N-donor	-
12644	GNE	NM_005476.3	1375	acgaacctcgagtgcaatagt	84185	-	kinase_related	-	-
12645	GPRK2L	NM_005307.1	1405	ctgtactctatgccgtttactgt	84251	-	gpcr、 kinase_related、 signal_transduction	G-protein-coupled receptor phosphorylating protein kinase	-
12646	GPRK5	NM_005308.1	358	aaggaccatagacagagattact	84262	-	kinase_related、 gpcr、	protein kinase C binding	-
12647	GPRK6	NM_002082.1	1548	caggacttctaccagaagttgc	84290	-	see also 1347 line	-	-

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12648	GPRK7	NM_139209.1	1720	aagtctggcgtgtgtttgtatt	84311	-	gpcr, kinase_related,	-	-
12649	GSG2	NM_031965.1	2227	gggtggaataatcaccottatagt	84354	-	kinase_related, cell_cycle	-	-
12650	GSK3A	NM_019884.1	1480	ccgtctccacaagcttaactga	84371	-	kinase_related	protein kinase CK2	diabetes mellitus(糖尿病), Alzheimer disease(アルツハイマー病), diabetes(糖尿病)
12651	GSK3B	NM_002093.2	558	tagtccgattgctgtttcttc	84379	-	see also 1357 line	-	-
12652	GSS	NM_000178.2	780	gtgatccgacgaacattgaaga	84405	-	-	glutathione synthase	5-oxoprolinuria(グルタチオン合成酵素欠損症), hereditary hemolytic anemia(遺伝性溶血性貧血)
12653	GUCY2C	NM_004963.1	673	ctggaggctagctgttctatt	84436	-	receptor_activity, kinase_related, signal_transduction	receptor guanylate cyclase	-
12654	GUCY2D	NM_000180.1	1417	gtgcgtgctgatccaaacaaca	84504	-	receptor_activity, kinase_related, signal_transduction	receptor guanylate cyclase	amaurosis congenita of Leber(レーバー先天性黒内障)
12655	GUCY2F	NM_001522.1	3220	aagtccggtccgaattgaatt	84593	-	receptor_activity, kinase_related, signal_transduction	receptor guanylate cyclase	-
12656	GIK1	NM_000858.3	390	gagtgatgcagcgtgacatagc	84602	-	kinase_related	membrane- associated guanylate kinase	-
12657	HAK	NM_052947.1	2327	aggatttctgtcacagattca	84637	-	kinase_related	-	-
12658	HARS	NM_002109.3	577	tggccgataccgggaattctacc	84693	-	-	histidine-tRNA ligase	-
12659	HARSL	NM_012208.2	1373	gggttgagcgaatctctctacatt	84723	-	-	histidine-tRNA ligase	-
12660	HEAB	NM_006831.1	1241	atgtcgaagagggtttctctatc	84751	-	-	GTP binding	-
12661	HIPK2	NM_022740.1	431	tcggcggaccacacacacctatg	84768	-	see also 8444 line	-	-
12662	HIPK3	NM_005734.2	805	cagcacccgtaccactctgttt	84838	-	see also 3977 line	-	-
12663	HK1	NM_000188.1	1311	tgggtcgaccgagatctttaca	84936	-	see also 157 line	-	-
12664	HK2	NM_000189.4	3136	gagcggctgcgctctactattgg	84972	-	kinase_related, cell_cycle	hexokinase	diabetes mellitus(糖尿病), diabetes(糖尿病)
12665	HK3	NM_002115.1	1420	cggaaatcgatgtctctctaattc	84995	-	kinase_related	hexokinase	-
12666	HRI	NM_014413.2	391	gtacagagtttagctcattgaga	85012	-	kinase_related	protein serine/threonine kinase	-
12667	HSA25083	NM_018401.1	724	gggtggagcgcgtacgaatcc	85065	-	-	-	-
12668	HSP70-4	NM_016299.1	856	ctgaagtgcgaacatcttttg	85101	-	see also 6790 line	-	-
12669	HSPA12B	NM_052970.3	2136	gcgctccatcgactttctttcc	85125	-	see also 8473 line	-	-
12670	HSPA1L	NM_005527.2	1225	atggagtgatctcaacaagagc	85146	-	-	heat shock protein	-
12671	HSPA2	NM_021979.2	1393	cagcgtactgtgcaggatcacg	85162	-	-	heat shock protein	-
12672	HSPA4	NM_002154.3	578	aggataaaggtagcatatatag	85169	-	see also 1384 line	-	-
12673	HSPA5	NM_005347.2	1292	gtgctgactcgaattccaag	85234	-	see also 3732 line	-	-
12674	HSPA6	NM_002155.2	1594	gagcacaggtaaggcttaacaaga	85247	-	-	heat shock protein	schizophrenia(精神分裂病)

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12675	HSPA8	NM_006597.3	1310	ctgtctcatcaagcgaataacc	85267	-	-	-	-
12676	HSPA9B	NM_004134.4	235	aggcgggattatgcatcagaagc	85274	-	see also 2791 line	-	-
12677	HSPCB	NM_007355.2	1816	gtgacaatctccaatagactgt	85316	-	translation	breast cancer(乳癌)	-
12678	HSPD1	NM_002156.3	190	cggatctgtggcggcttaaatg	85323	-	heat shock protein	spastic paraplegia(痙性対麻痺)	-
12679	HSPH1	NM_006644.1	2566	atgtgaaccagtgtgaacacac	85380	-	see also 4896 line	-	-
12680	HUNK	NM_014586.1	2058	tcggacagaccacgtgaagtc	85408	-	kinase_related, signal_transduction	protein serine/threonine kinase	-
12681	HYOU1	NM_006389.2	929	cagatccggggagtaggatttga	85432	-	-	chaperone	-
12682	IARS	NM_002161.2	3048	aagtcataatcgcatacagaaa	85555	-	see also 1386 line	-	-
12683	ICK	NM_014920.2	743	ctgcacggaccagaaactgtga	85593	-	see also 6094 line	-	-
12684	IDH3G	NM_004135.2	1125	cggcaagagtagtcccaataaga	85641	-	see also 2792 line	-	-
12685	IGF1R	NM_000875.2	3506	ttagtatgacggagagatatctat	85700	-	see also 566 line	-	-
12686	IKBE	NM_014002.1	1624	tggatggcaggaggaactatgttt	85707	-	-	NF-kappaB-inducing kinase	-
12687	ILK	NM_004517.1	324	ggggcagcaggatcaatgtatga	85710	-	see also 3065 line	-	-
12688	IMMP2L	NM_032549.1	659	cortgtgacattgtatcattgg	85739	-	-	-	-
12689	INSL3	NM_005543.2	356	cagtggtctgtaccacaagacc	85740	-	-	peptide hormone	-
12690	INSR	NM_000208.1	2762	gtgagttatcggcgatagtga	85783	-	receptor activity, kinase_related, signal_transduction	Smad3/Sp-1 heterodimer	diabetes mellitus(糖尿病), leprechaunism(妖精症), diabetes(糖尿病), obesity(肥満)
12691	INSRR	NM_014215.1	1956	tggcacagctacacagtggtgt	85809	-	see also 5539 line	-	-
12692	IPT	NM_017646.3	905	atgcacactggagactagtaacc	85851	-	see also 7075 line	-	-
12693	IRAK1	NM_001569.2	153	gggtcatgtgccgcttcacaaa	85863	-	receptor activity, kinase_related, transcription_regulat or,	protein binding	-
12694	IRAK2	NM_001570.2	1283	aggacttactctcagtgatatt	85892	-	kinase_related, signal_transduction	NF-kappaB-inducing kinase	-
12695	IRAK3	NM_007199.1	342	gggacatcgtcggagctattcatt	85903	-	see also 5001 line	-	-
12696	IRAK4	NM_016123.1	842	atgcctaattggttcattgctaga	85970	-	-	-	-
12697	ITGB1BP3	NM_014446.1	188	aagccccaagacaaataagcagt	85991	-	kinase_related, signal_transduction	-	-
12698	ITK	NM_005546.3	1907	ctgogtcaactggctgaattgc	86037	-	-	non-membrane spanning protein tyrosine kinase	-
12699	JAK2	NM_004972.2	881	cagagccctatggcctggaatat	86126	-	kinase_related	-	-
12700	JAK3	NM_000215.1	2969	gagcagggcacacagctcaagatcg	86246	-	see also 3454 line	protein tyrosine kinase	-
12701	JIK	NM_016281.2	999	atgactccccaacagttacagctct	86273	-	kinase_related	-	-
12702	KATNA1	NM_007044.2	590	ttagtagtaccggatagataaa	86331	-	see also 4933 line	-	-
12703	KCNU1	NM_000220.2	346	tggtagtcagtagctgattccaa	86361	-	see also 165 line	-	-

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12704	KCNJ10	NM_002241.2	749	gagggtgagaccattggttca	86389	-	channel	ATP-activated inward rectifier potassium channel	-
12705	KDR	NM_002253.1	4072	cagacggacagtggtggttct	86462	-	receptor activity, signal transduction, kinase related	vascular endothelial growth factor receptor	hemangioma(血管腫)
12706	KIAA0195	NM_014738.1	1032	caigtgtgtgctacactatgc	86469	-	see also 5927 line		
12707	KIAA0703	NM_014861.1	1152	ggggaagccggagccaatgtagta	86483	-		plasma membrane cation-transporting ATPase	-
12708	KIAA0999	NM_025164.3	3522	cagcagcagtgctttatgtacagc	86564	-	-	-	-
12709	KIAA1164	NM_019092.1	675	tagctggagttcaatagttagg	86570	-	-	-	-
12710	KIAA1804	NM_032435.1	1917	cgcagtcgagccatcacagtga	86600	-	kinase related	-	-
12711	KIAA1811	NM_032430.1	1054	gagccctctgaggggaatgatcg	86629	-	kinase related	-	-
12712	KIF11	NM_004523.2	245	tagccocattcaatagtagaat	86640	-	-	microtubule motor	-
12713	KIF12	NM_138424.1	1546	cgcagtcctggcagagagttaga	86737	-	-	-	-
12714	KIF13A	NM_022113.3	1654	gaggaaacgctggagattggttga	86782	-	-	-	-
12715	KIF13B	NM_015254.1	1119	aggaaacctaatgccgaattatc	86896	-	kinase related, signal transduction	-	-
12716	KIF14	NM_014875.1	2520	atgtaaccaagccggtttaata	87042	-	-	-	-
12717	KIF1B	NM_015074.1	5186	tcgtccgtggccttatgtcttc	87232	-	see also 6222 line	-	-
12718	KIF2	NM_004520.1	1898	atgatgtcgattcatatgctaca	87286	-	see also 3072 line	-	-
12719	KIF20A	NM_005733.1	2652	aagggttcccttactcaaat	87335	-	see also 3976 line	-	-
12720	KIF21A	NM_017641.2	2415	aaggttcgcttaataaacaat	87407	-	-	-	-
12721	KIF25	NM_005355.2	763	cggcagcgcctcgaaactgatgg	87502	-	-	-	-
12722	KIF27	NM_017576.1	832	tggattccctcggcatattgt	87512	-	-	-	-
12723	KIF3A	NM_007054.3	1034	atgtgccttatgttaactctaaa	87588	-	-	motor	-
12724	KIF3B	NM_004798.2	800	cagctcgggttctcatgcaattt	87630	-	-	plus-end-directed kinesin ATPase	-
12725	KIF3C	NM_002254.4	2600	atgaagaagcggcccaactctgc	87665	-	see also 1449 line	-	-
12726	KIF5A	NM_004984.1	1033	ctgcccggagcactatgttcact	87685	-	see also 3474 line	-	-
12727	KIF5B	NM_004521.1	3068	cagattgctaaacctattctgc	87800	-	see also 3075 line	-	-
12728	KIF5C	NM_004522.1	684	atgggatcatccacgaattgc	87801	-	see also 3081 line	-	-
12729	KIF9	NM_022342.2	735	aggccattcccgagccttaca	87850	-	see also 8335 line	-	-
12730	KIFC2	NM_145754.2	2024	gcggaggcccgagaccataaac	87880	-	-	-	-
12731	KIFC3	NM_005550.2	1882	cagcgctcgaggagatcacatg	87887	-	-	-	-
12732	KIT	NM_000222.1	2634	tggaaatgcgggtcgattctaagt	87978	-	see also 166 line	-	-
12733	KPI2	NM_014916.2	1261	ctgcagatcagactaagtatagt	88009	-	kinase related, phosphatase	-	-
12734	KSR2	NM_173598.2	1474	gagccaaagctcggagaaatgaaga	88098	-	kinase related	-	-
12735	LAK	NM_025144.2	653	ctggtcagtcggtctgtatata	88109	-	-	-	-
12736	LARS	NM_020117.8	3573	tggcgatacaaatctatctctgg	88277	-	-	-	-
12737	LARS2	NM_015340.2	1499	gtggagacgtgacagatgataaa	88308	-	see also 6381 line	-	-
12738	LATS1	NM_004690.2	3276	ttagttggagactcccaattatat	88440	-	kinase related	-	-

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12739	LATS2	NM_014572.1	2552	gtgggtggtcaaaactctact	88477	-	kinase_related, cell_cycle, signal_transduction	-	kinase_related	-
12740	LCK	NM_005356.2	106	gtgtgtgagaactgcattatcc	88490	-	protein tyrosine kinase	-		
12741	LIMK1	NM_002314.2	982	ctgagctctcggcttatactcc	88516	-	see also 1489 line	-		
12742	LIMK2	NM_005569.2	1461	tggcctattgcaactctatgac	88537	-	kinase_related	-		
12743	LOC11570	NM_145245.2	1552	tgcctgcccgcagagaaacatgt	88555	-	see also 9783 line	-		
12744	LOC11614	NM_138458.1	1115	cggtagagactatgactgtaca	88582	-	see also 9623 line	-		
12745	LOC20038	NM_145299.1	757	cagcctcgtggtgattacttcg	88633	-	-	-		
12746	LOC34037	NM_178564.2	1200	tgggaatctaacctcactgatgaact	88664	-	-	-		
12747	LOC84643	NM_032559.2	1087	caggaacggcccaagattgttct	88671	-	-	-		
12748	LOC91807	NM_182493.1	2059	caggacatcaaatgaagattct	88696	-	kinase_related	-		
12749	LOC91862	NM_052858.1	1074	caggcgtgtaccacaaagcaagg	88715	-	-	-		
12750	LOC92935	NM_138395.1	1413	aggtagcagaccactatgataac	88737	-	see also 9615 line	-		
12751	LONP	NM_031490.2	2525	aggcaactgtacagacaggattaa	88805	-	see also 9040 line	-		
12752	LTK	NM_002344.1	1557	gtgtatgaggagactgtaattgg	88819	-	receptor_activity, kinase_related, signal_transduction	transmembrane receptor protein tyrosine kinase	-	
12753	LYK5	NM_153335.3	450	acgtgactgtacggaggattaac	88831	-	see also 9988 line	-		
12754	LYN	NM_002350.1	1755	gagaccaacgttgactacttac	88888	-	kinase_related	receptor signaling protein tyrosine kinase	-	
12755	MAK	NM_005906.3	797	atggctgaactctatatgttaag	88906	-	kinase_related	protein serine/threonine kinase	-	
12756	MAP2K1	NM_002755.2	743	tgggcacaaggtctcaatgtctg	88945	-	see also 1798 line	-		
12757	MAP2K2	NM_030602.2	670	gtgacggggagatcagcatttgc	88959	-	kinase_related	protein tyrosine kinase	-	
12758	MAP2K3	NM_002756.2	595	ggcgcaggtcgactgtttttaca	88968	-	see also 1799 line	-		
12759	MAP2K5	NM_002757.2	1307	gtgcgattcatatatacatg	88995	-	see also 1801 line	-		
12760	MAP2K6	NM_002758.2	587	cggatccgagccacagtaaatag	89025	-	kinase_related, cell_cycle, signal_transduction	-		
12761	MAP2K7	NM_145185.2	496	acgtcattgctgtaagcaaatg	89053	-	-	-		
12762	MAP3K10	NM_002446.2	1227	tggcgtggctatgaataagctga	89062	-	kinase_related, signal_transduction , apoptosis	protein tyrosine kinase	-	
12763	MAP3K11	NM_002419.2	2277	atgactatccccctaggatct	89069	-	kinase_related	-		
12764	MAP3K12	NM_006301.2	1472	caggagagagcaagcttagagc	89084	-	see also 4392 line	-		
12765	MAP3K13	NM_004721.3	1659	aggcatgcgttgatattctga	89128	-	kinase_related, signal_transduction	-		
12766	MAP3K14	NM_003954.1	1520	aaggtgcggctggaagtatttcg	89168	-	see also 2701 line	-		
12767	MAP3K3	NM_002401.2	1619	acgcctgcagacgatctgtatgt	89276	-	kinase_related	protein tyrosine kinase	-	

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12768	MAP3K4	NM_005922.1	1809	gggacgctatagcattggtaag	89338	-	see also 4139 line		
12769	MAP3K5	NM_005923.3	1262	cagcagtagatataatcgaagt	89452	-	see also 4141 line		
12770	MAP3K6	NM_004672.2	805	ctgcctgtgtggcgtatctaca	89535	-	see also 3207 line		
12771	MAP3K7	NM_003188.2	744	atgcaacccaaagcctaattca	89568	-	kinase related, signal transduction	-	-
12772	MAP3K8	NM_005204.2	2073	gggacacccaacgcttgaatg	89629	-	kinase related	protein serine/threonine kinase	-
12773	MAP4K1	NM_007181.2	75	cggcagctatgggaagcttta	89631	-	kinase related	-	-
12774	MAP4K2	NM_004579.2	1685	ctggcctctctgctgaacaag	89663	-	kinase related	-	-
12775	MAP4K3	NM_003618.2	2352	ttgagacggctaatccaaattot	89732	-	kinase related	-	-
12776	MAP4K5	NM_006575.3	2380	tggtctgtgtagctattagcaaa	89793	-	see also 4608 line	-	-
12777	MAPK1	NM_002745.2	383	aagttcagtagctatcaagaaa	89815	-	see also 1787 line	-	-
12778	MAPK10	NM_002753.2	1179	cagcggactccagcacacaataa	89858	-	kinase related, signal transduction	-	-
12779	MAPK11	NM_002751.4	451	gagcagcagcagcagcttaattoc	89867	-	kinase related, signal transduction	-	-
12780	MAPK12	NM_002969.2	1326	atggaagcgtgttacttacaag	89873	-	kinase related, cell cycle, signal transduction	SAP kinase 3	-
12781	MAPK13	NM_002754.3	1062	cagcctttgtgattccttaga	89881	-	kinase related, cell cycle	MAP kinase	-
12782	MAPK14	NM_001315.1	688	tggggcagatctgaacaacatt	89892	-	kinase related, signal transduction	-	-
12783	MAPK3	NM_002746.1	992	tggaccggatgttaaccttaac	89928	-	-	-	-
12784	MAPK4	NM_002747.2	1007	aaggatcgttgatcagcattact	89935	-	see also 1788 line	-	-
12785	MAPK6	NM_002748.2	1854	ttggcctgtacataacaactttg	89971	-	see also 1789 line	-	-
12786	MAPK7	NM_002749.2	2277	ttgtgaccagcagcagctatcaag	90026	-	see also 1790 line	-	-
12787	MAPK8	NM_002750.2	571	atgtagtgactcgtctactacaga	90048	-	see also 1791 line	-	-
12788	MAPK9	NM_002752.3	568	cggacagcgtgacactaactca	90082	-	see also 1795 line	-	-
12789	MAPKAPK	NM_004759.3	944	ttgaccactcttggtatacacc	90108	-	kinase related	-	-
12790	MAPKAPK	NM_004635.3	715	ctgctactcctctattatgttg	90126	-	see also 3149 line	-	-
12791	MAPKAPK	NM_003668.2	1574	tggatgtgtgtggtatcaacaga	90164	-	see also 2496 line	-	-
12792	MARK1	NM_018650.2	2392	gagcagcagcagcgttgcttataa	90221	-	see also 7536 line	-	-
12793	MARK2	NM_004954.2	1302	atgtgtccatgggtatacacag	90244	-	kinase related	-	-
12794	MARK4	NM_031417.2	954	gagggttgagccatacacaga	90325	-	see also 9016 line	-	-
12795	MAST205	NM_015112.1	2972	gtgatggctccctgagatatt	90371	-	see also 6250 line	-	-
12796	MAT1A	NM_000429.1	597	ctggggcctgactctaagactca	90388	-	-	methionine adenosyltransferas	hypermethioninemia(高メチオニン血症)
12797	MAT2A	NM_005911.3	547	aggagtgtatgctcttaaccatt	90405	-	-	methionine adenosyltransferas	-
12798	MATK	NM_002378.2	1117	tggcgtgaaagaatatcaagtgt	90425	-	see also 1531 line	-	-
12799	MCCO1	NM_020166.2	1817	tagccatagctgtacgtataac	90479	-	see also 7778 line	-	-
12800	MDN1	NM_014611.1	6432	gagcaggtgtgattattacgacc	90650	-	see also 5779 line	-	-



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12801	MELK	NM_014791.1	502	ttgtcttcgcgcagatagatct	90857	-	kinase_related	-	-
12802	MERTK	NM_006343.1	1579	ctgcacacggttggttagattat	90954	-	see also 4437 line	-	-
12803	MGC13186	NM_032324.1	220	gggagaagaataggattgatgt	91130	-	-	-	-
12804	MGC14560	NM_016301.2	628	tagatccagacatgattcttta	91155	-	-	-	-
12805	MGC16169	NM_033115.2	1406	ctgcacacgctccctttaatcatc	91187	-	kinase_related	-	-
12806	MGC22688	NM_145001.1	365	aagtcgctggagcgcaatgaagt	91233	-	kinase_related	-	-
12807	MGC2599	NM_032116.2	471	agggctcccaatcgagaagtaag	91242	-	see also 9075 line	-	-
12808	MGC2744	NM_025287.2	1062	ctggcccatcgggtgtgtaac	91286	-	-	-	-
12809	MGC33182	NM_145203.2	1171	cagaattcgccatgtactgaac	91300	-	kinase_related、 signal transduction	-	-
12810	MGC42105	NM_153381.2	1226	gaggtactatcccgagaatct	91303	-	kinase_related	-	-
12811	MGC45428	NM_152619.1	1149	gaggttgaccgttgataagtc	91357	-	see also 9905 line	-	-
12812	MGC4796	NM_032017.1	1028	gaggacacatcggataaccatca	91387	-	kinase_related	-	-
12813	MGC5347	NM_024083.1	1392	aagcgtcattggattatggata	91404	-	-	-	-
12814	MGC8407	NM_024046.2	1580	caggctccaccctctagtaaagg	91448	-	see also 8578 line	-	-
12815	MIDORI	NM_020778.1	5448	tggctgtatcagtgacaaatgg	91482	-	see also 7962 line	-	-
12816	MK167	NM_002417.2	9612	gagccgggaacccatactatga	91582	-	cell cycle	ATP binding	breast cancer(乳癌)、prostate cancer(前立腺癌)
12817	MKS	NM_018848.2	1345	tgggtcgtagtataatacaagt	91602	-	see also 7603 line	-	-
12818	MKNK1	NM_003684.3	335	gggagcctatgccaaagtccaag	91651	-	kinase_related	-	-
12819	MKNK2	NM_017572.2	985	gtcgccgtcggcgagtagacatgg	91664	-	kinase_related	-	-
12820	MLH1	NM_000249.2	686	atgcctcaacgctggacaatt	91686	-	see also 182 line	-	-
12821	MORC	NM_014429.1	1715	tagagagtcggttaataaagatc	91766	-	see also 5675 line	-	-
12822	MOS	NM_005372.1	207	aggggttgctcgtgtacaagg	91794	-	kinase_related、 cell cycle	protein kinase CK2	-
12823	MOV10	NM_020963.1	167	gagcggctcgagaccattataa	91808	-	see also 8052 line	-	-
12824	MPHOSPH	NM_016195.1	4621	tggatatcaagccccaaacgtatt	91962	-	cell cycle	-	-
12825	MST1R	NM_002447.1	139	tcggagctttgacgtgaagtaag	91990	-	receptor_activity、 kinase_related、 signal transduction	macrophage colony stimulating factor receptor	-
12826	MST4	NM_016542.2	1192	gagctttaccaccgtagcagaaga	92065	-	see also 6908 line	-	-
12827	MT	NM_014507.1	386	ctggccgctgtcgagaaactaca	92074	-	-	-	-
12828	MTHFD1	NM_005956.2	1012	ttgatatacagatcttctgtaa	92112	-	see also 4162 line	-	-
12829	MUSK	NM_005592.1	47	atggagagagctcgtcaacattcc	92149	-	see also 3882 line	-	-
12830	MVD	NM_002461.1	76	ctggggcaagcgcgatgaagagc	92188	-	kinase_related	diphosphomevalona te decarboxylase	-
12831	MVK	NM_000431.1	452	ctgcgcgagcctgatatc_tagt	92199	-	-	familial periodic fever(家族性周期性発熱)、 mevalonic aciduria(メバロン酸尿症)、 hyperimmunoglobulinaemia D(高免疫グロブリン血症)	-
12832	MYH1	NM_005963.2	811	ctggagaagctctaggattacttt	92204	-	-	mevalonate kinase	-
12833	MYH13	NM_002474.1	3743	aaggcgaacccctagaagaataa	92232	-	-	muscle motor	leukemia(白血病)
12834	MYH13	NM_003802.1	3846	gtgcgcgcgtagtagaatcaat	92280	-	-	muscle motor	-
12835	MYH2	NM_017534.1	4575	agggaaacgtagtccatgaactgg	92302	-	-	muscle motor	-
12836	MYH3	NM_002470.1	3791	tggagagtgctcgaatctaaag	92322	-	-	myosin ATPase	-

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12837	MYH4	NM_017533.1	1334	aggctggcaatgagttcgtaacc	92343	-	-	myosin ATPase	-
12838	MYH6	NM_002471.1	3318	aagaaggagtttgacattaatca	92371	-	-	Thyroid hormone receptor beta-2	-
12839	MYH7	NM_000257.1	1961	tggggctgatgcgcctattgaga	92382	-	-	structural constituent of muscle	cardiomyopathy(アルコール性心筋症)
12840	MYH8	NM_002472.1	249	gagggaaagtaaacgcgtaagact	92397	-	-	structural constituent of muscle	-
12841	MYH9	NM_002473.2	2212	cagcctctgctgctgaatgataaa	92439	-	-	motor	cochleosaccular degeneration(蝸牛管変性)
12842	MYLK	NM_005965.2	3194	aggacgggaactgctcttaatt	92486	-	see also 4168 line	-	-
12843	MYLK2	NM_033118.2	1367	atgaccaaatctcgcataagaca	92509	-	kinase related	-	-
12844	MYO10	NM_012334.1	6230	gggacccctggcggaatcgtat	92625	-	see also 5295 line	-	-
12845	MYO15A	NM_016239.2	7172	tggccacgactacgtgttagacc	92678	-	see also 6746 line	-	-
12846	MYO18B	NM_032608.4	7911	acgacgatgttgccgacataatg	92761	-	-	-	non-small-cell lung cancer(非小細胞肺癌)
12847	MYO1A	NM_005379.2	892	aagcttgagcggggtacaaactgg	92772	-	-	myosin ATPase	-
12848	MYO1C	NM_033375.1	1952	tgcgcgaaatcagaagctttcc	92845	-	-	motor	-
12849	MYO1E	NM_004998.1	1098	gggctcacaaggtatgagaca	92874	-	see also 3493 line	-	-
12850	MYO1F	NM_012335.2	590	ctgtgcgaacaaatctccagc	92932	-	-	motor	-
12851	MYO3A	NM_017433.3	2482	ctggccctcttagatatttc	93014	-	see also 7004 line	-	-
12852	MYO3B	NM_138995.1	262	aagtctacaagtaactacaag	93074	-	-	-	-
12853	MYO5A	NM_000259.1	2371	cagcgcctaccgtctcctaata	93191	-	see also 201 line	-	-
12854	MYO5C	NM_018728.1	2653	cgagcattgtgtcttaatttc	93325	-	-	motor	-
12855	MYO6	NM_004999.1	348	aagccacactgctcctaataatc	93378	-	see also 3494 line	-	-
12856	MYO7A	NM_000260.1	1450	acgtcgcgacgcctctgtaaaag	93493	-	see also 205 line	-	-
12857	MYO9A	NM_006901.1	4957	atgtactggggctccctcatta	93679	-	see also 4834 line	-	-
12858	MYO9B	NM_004145.2	4444	aagaaccgaaatgtcaagattgg	93781	-	see also 2793 line	-	-
12859	NADSYN1	NM_018161.3	2091	aggttgatctgcgaccattct	93812	-	-	-	-
12860	NAGK	NM_017567.1	601	cagatcgctaggagatactcact	93823	-	see also 7035 line	-	-
12861	NALP1	NM_014922.2	3886	gcggtgacccgttgagatgaatt	93872	-	-	-	-
12862	NALP11	NM_145007.1	2157	tgtaatcggagcctgacatacc	93951	-	-	-	-
12863	NALP12	NM_033297.1	1488	cagtggaacacggcttgattcc	93991	-	signal transduction	-	-
12864	NALP2	NM_017852.1	1845	gcgatgcgacataagttgtaagg	94032	-	apoptosis	ATP binding	-
12865	NALP5	NM_153447.2	2501	tggccaaaccgtaacctaaatgacc	94099	-	-	-	-
12866	NALP6	NM_138329.1	525	gcgctggacacgcgaacttca	94125	-	-	-	-
12867	NALP7	NM_139176.1	1975	aaggtgcacttaacctaaccttc	94147	-	-	-	-
12868	NAV1	NM_020443.2	4859	tgcgctcgaggtgtgcaataaca	94203	-	see also 7877 line	-	-
12869	NAV2	NM_145117.2	2623	gagatgagtgccgtagcactact	94243	-	-	-	-
12870	NAV3	NM_014903.2	2340	cagtggtaccagtcgattcacc	94363	-	-	-	-
12871	NDUFA10	NM_004544.2	147	cagcgctgtagaggaattcatag	94474	-	-	NADH dehydrogenase (ubiquinone)	-
12872	NEK11	NM_024800.2	750	aggatactctcgcgagacttaaa	94503	-	-	-	-

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12873	NEK2	NM_002497.1	218	gagtgatggcaagatattagttt	94548	-	kinase_related, cell_cycle	protein kinase CK2	-
12874	NEK3	NM_002498.1	969	cagtcactgcgtctcttaact	94594	-	kinase_related, cell_cycle	-	-
12875	NEK4	NM_003151.1	497	caggtgtgtagtggttgataga	94616	-	kinase_related	protein kinase CK2	-
12876	NEK6	NM_014397.3	959	gagcactactccgagaagttacg	94686	-	kinase_related	-	-
12877	NEK7	NM_133494.1	393	ctggcgcactatccagaatgac	94698	-	see also 9589 line	-	-
12878	NEK8	NM_178170.2	491	tgggtaccatctatctctcc	94723	-	-	-	-
12879	NEK9	NM_033116.3	288	acgtgtgagtcgtgaatgaga	94734	-	see also 9363 line	-	-
12880	NLK	NM_016231.1	1322	agggcgttaaggcacatatactca	94825	-	see also 6733 line	-	-
12881	NME1	NM_000269.2	229	atgcaagcttcgaagatctct	94846	-	kinase_related, cell_cycle	nucleoside- diphosphate kinase	neuroblastoma(神経芽細胞腫)、melanoma(メラノーマ)、testicular cancer(嚢丸癌)
12882	NME3	NM_002513.2	663	ctgggcactggctgtatgagtag	94852	-	kinase_related, apoptosis	nucleoside- diphosphate kinase	-
12883	NME4	NM_005009.2	356	atggtctgggaagggtacaatgt	94853	-	kinase_related	nucleoside- diphosphate kinase	-
12884	NME5	NM_003551.2	314	ttgtccatgattatagctaga	94859	-	see also 2364 line	-	-
12885	NME7	NM_013330.3	465	ttgactatgggatacaatataca	94893	-	kinase_related	-	-
12886	NOLG1	NM_004741.1	1864	aagcttcagaccctccataacacatt	94927	-	cell_cycle	GTP binding	-
12887	NPR2	NM_000907.1	1328	tggcgcacccatctctgtgataaa	94950	-	see also 588 line	-	-
12888	NRBP	NM_013392.1	1617	ctgacacagcgggtgactct	95011	-	see also 5425 line	-	-
12889	NSF	NM_006178.1	2125	aaggacacgacacacattgcaca	95060	-	see also 4271 line	-	-
12890	NTRK1	NM_002529.2	1323	atgtggacggagaaaacaagtttg	95069	-	receptor_activity, kinase_related, signal_transduction	neurotrophin TRKA receptor	thyroid cancer(甲状腺癌)、papillary thyroid carcinomas(副甲状腺乳頭癌)、medullary thyroid carcinoma(髄質甲状腺癌)、neuroblastoma(神経芽細胞腫)、neuropathy(ニューロパシー)
12891	NTRK2	NM_006180.2	1420	cagcgttcagtggttctataac	95101	-	see also 4274 line	-	-
12892	NTRK3	NM_002530.1	1526	tcgacgggtccaaatttggatga	95146	-	kinase_related, receptor_activity, signal_transduction	neurotrophin TRKC receptor	neuroblastoma(神経芽細胞腫)、infantile fibrosarcoma(乳児線維肉腫)
12893	NUBP1	NM_002484.1	264	ttgtcttctagacatcgatata	95159	-	see also 1590 line	-	-
12894	NVL	NM_002533.1	1238	gggaagggtcgaccggagaaat	95190	-	see also 1631 line	-	-
12895	OSR1	NM_005109.1	934	atggaaacaggtccggtggtatga	95242	-	kinase_related	-	-
12896	P2RX1	NM_002558.2	576	cgggtgggtgttttctctatgaga	95274	-	see also 1648 line	-	-
12897	P2RX2	NM_012226.3	252	tggcgcgtgtgtccctattacc	95287	-	receptor_activity, channel	-	-
12898	P2RX3	NM_002559.2	146	gggacatcaaccggagtgttca	95297	-	receptor_activity, channel, signal_transduction	ATP-gated cation channel	-
12899	P2RX4	NM_002560.2	1149	gggacgttgagcacaacgtatct	95329	-	receptor_activity, channel, signal_transduction	-	-
12900	P2RX5	NM_002561.2	761	caggggcaccctgtgagatotttg	95341	-	receptor_activity, channel	-	-

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12901	P2RX7	NM_002562.4	1224	ctgtgtggtcaacgaataactact	95386	-	receptor_activity, channel, signal_transduction	-
12902	P2RXL1	NM_005446.2	696	ctgcgcgtatgaaccacaattca	95402	-	channel, receptor_activity, signal_transduction	transmembrane receptor
12903	PAK1	NM_002576.2	1182	ggcgcatcctaagaagaataata	95464	-	see also 1657 line	-
12904	PAK2	NM_002577.2	688	ccgcgacccgcatcacaagaatc	95477	-	kinase_related, signal_transduction	protein tyrosine kinase
12905	PAK3	NM_002578.1	1411	ttgtatctgatagccactaatgg	95522	-	see also 1658 line	-
12906	PAK4	NM_005884.2	1704	ctggtgcctggggataatgtga	95525	-	kinase_related, signal_transduction	protein serine/threonine kinase
12907	PAK6	NM_020168.3	580	gtggacccttcgcgaatcacacg	95526	-	kinase_related	-
12908	PAK7	NM_020341.2	1010	ctgcgattatcacatcttg	95547	-	see also 7836 line	-
12909	PANK1	NM_138316.2	910	gtgcgcgtgaatgagaacatag	95593	-	see also 9596 line	-
12910	PANK3	NM_024594.2	765	tggacaagccagtgctattatt	95642	-	see also 8657 line	-
12911	PANK4	NM_018216.1	125	tgcacataggcgggtggttaacc	95661	-	see also 7323 line	-
12912	PAPSS1	NM_005443.3	292	ctggaatggtgacaaattctgtca	95689	-	sulfate adenylyltransferase (ATP)	-
12913	PAPSS2	NM_004670.2	350	atgtccgtcatggccttaacaga	95730	-	kinase_related	-
12914	PASK	NM_015148.2	526	tgggtgtaacacaaaagcttgc	95784	-	see also 3192 line	-
12915	PC	NM_000920.2	2769	tggcaactcggacgctgatgaa	95836	-	kinase_related, signal_transduction	-
12916	PCCA	NM_000282.1	731	tggcgcgtatgatactactaata	95864	-	see also 597 line	-
12917	PCOLCE2	NM_013363.2	974	gggtttattggtcactacattt	95931	-	see also 246 line	-
12918	PCTK1	NM_006201.2	843	ccgtggtgcagcctatctcgaga	95946	-	see also 5409 line	-
12919	PCTK2	NM_002595.2	867	ttgtctcagaaatcgatacata	95974	-	see also 4297 line	-
12920	PCTK3	NM_002596.1	1250	gagtactccacccccattgat	96009	-	see also 1676 line	-
12921	PDGFRA	NM_006206.2	2539	aagcacacggagcgtatgtattt	96041	-	see also 1679 line	piebaldism(まだら症), familial/ sporadic gastrointestinal stromal tumors(家族性/散発性 胃腸間質腫瘍)
12922	PDGFRB	NM_002609.2	3404	gggtgacaacgactatataatcc	96101	-	receptor_activity, signal_transduction 、kinase_related	platelet-derived growth factor, alpha-receptor
12923	PDK1	NM_002610.3	1186	acgttttaccgacaaatactcc	96139	-	see also 1687 line	-
12924	PDK2	NM_002611.3	1161	gggacccgctgctgctatctat	96147	-	see also 1688 line	-
12925	PDK3	NM_005391.1	183	ctgtggtggctggtaacacaaag	96155	-	see also 1689 line	-
12926	PDK4	NM_002612.2	1108	ttgaccgcctcttttagttatata	96222	-	see also 3760 line	-
12927	PDPK1	NM_002613.1	808	tgggaacagcgcagctacgtttct	96240	-	kinase_related, signal_transduction	pyruvate dehydrogenase (lipoamide) kinase
12928	PDZK3	NM_015022.2	1365	ggggaggaagtggccgaatagg	96270	-	kinase_related, signal_transduction	diabetes mellitus(糖尿病), diabetes(糖尿病)
12929	PEX1	NM_000466.1	495	ttgggttgatcaacaaacgtaca	96384	-	see also 374 line	-

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12930	PEX6	NM_000287.2	2911	aagcgcatccagcgcaagttgc	96506	-	-	peroxisome biogenesis disorder (ベルオキシノー ム生合成障害)、Zellweger syndrome (ツェルウェ ガー症候群)
12931	PFAS	NM_012383.1	3794	gcgcacggggaaggttagc	96540	-	-	-
12932	PFKFB1	NM_002625.1	330	aggcagfgagctacaagaactat	96559	-	kinase, related, phosphatase	-
12933	PFKFB2	NM_006212.1	1149	aagtatctgtatcgatattctgg	96603	-	kinase, related, phosphatase	-
12934	PFKFB3	NM_004566.1	574	gtgtgcacgaccctacagttgt	96612	-	fructose-2, 6- bisphosphate 2- phosphatase	-
12935	PFKFB4	NM_004567.2	426	cggagagcgaccattcttaatt	96637	-	fructose-2, 6- bisphosphate 2- phosphatase	-
12936	PFTK1	NM_012395.2	882	cagtgcacacggggagtaaacg	96663	-	see also 3106 line	-
12937	PHKG1	NM_006213.2	1071	tagcttcagtcgagatctactac	96681	-	see also 5309 line	-
12938	PHKG2	NM_000294.1	674	tagcgcagagatctcttaaatgc	96687	-	protein tyrosine kinase	-
12939	PIK3R4	NM_014602.1	1888	aagaggttctctgtaataatgc	96744	-	protein tyrosine kinase	cirrhosis due to liver phosphorylase kinase deficiency (肝障害)、glycogenosis (糖原病)
12940	PIM1	NM_002648.2	656	cgggttctccgcgcgtcattagg	96826	-	Smad3/Sp-1 heterodimer	-
12941	PINK1	NM_032409.1	1027	cggagcgtgtctctcgtattga	96838	-	see also 9184 line	-
12942	PKE	NM_173575.2	1386	cagtcgagaatgactactcttoa	96859	-	kinase, related, cell_cycle	-
12943	PKMYT1	NM_004203.3	1141	atgtcaagcctgcacacatcttc	96865	-	kinase, related, cell_cycle	-
12944	PLK	NM_005030.3	552	ctgcaccgaaacccgagttattca	96870	-	protein serine/threonine kinase	-
12945	PI13	NM_013288.2	313	gtgcattctacgtacattacaatg	96887	-	-	-
12946	PRKAA2	NM_006252.1	528	tagccgatttcggattatctaat	96901	-	kinase, related, signal_transduction	-
12947	PRKACA	NM_002730.2	1056	atgggggtcaacgatatacaagaac	96955	-	kinase, related, signal_transduction	-
12948	PRKACB	NM_002731.1	715	gggcattagtagtgctaatctat	96980	-	kinase, related, signal_transduction	-
12949	PRKACG	NM_002732.2	860	acgggggttcgacatcaagaac	97005	-	kinase, related, signal_transduction	-
12950	PRKCA	NM_002737.1	429	ctgcgatataaacgttcacaagc	97011	-	see also 1774 line	-
12951	PRKCB1	NM_002738.4	1899	ctgaaggcggaacgtgatatacaa	97063	-	see also 1775 line	-
12952	PRKCD	NM_006254.2	1065	cogcttcaaggttcacaactaca	97080	-	protein tyrosine kinase	-
12953	PRKCE	NM_005400.1	1531	gagcctcgttcacgggttctatgc	97117	-	kinase, related, apoptosis	-

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12954	PRKCG	NM_002739.2	408	tgaacgatgcacgaattgtga	97128	-	kinase related	protein tyrosine kinase	retinitis pigmentosa(色素性網膜炎)
12955	PRKCH	NM_006255.2	1432	ccgaacttgatgcacaacttg	97177	-	see also 4337 line		
12956	PRKCI	NM_002740.3	776	gtgcataaactcgtcacaattg	97225	-	see also 1776 line		
12957	PRKCL1	NM_002741.1	1593	gcgtctaggcagatgaacatcg	97253	-	kinase related, signal transduction	protein serine/threonine kinase	-
12958	PRKCL2	NM_006256.1	1137	aagcgaagtgcgaatcttc	97313	-	see also 4341 line		
12959	PRKCN	NM_005813.2	2792	aagttctccggagcaagggtac	97481	-	see also 4056 line		
12960	PRKCQ	NM_006257.1	78	ttgtcaggcgaggctgttaacc	97496	-	see also 4343 line		
12961	PRKD2	NM_016457.2	291	tggcttctacggcctttacgaca	97545	-	kinase related	protein serine/threonine kinase	-
12962	PRKG1	NM_006258.1	671	tggccattgatgcacaatgttt	97578	-	see also 4344 line		
12963	PRKG2	NM_006259.1	1261	atgcgaagcggctcatgtctaac	97641	-	see also 4348 line		
12964	PRKWN1	NM_018979.1	1823	ctgctagcacggcgtacacctact	97697	-	see also 7630 line		
12965	PRKWNK2	NM_006648.3	3664	ggggacgcaccgcgagatgaattgc	97827	-	kinase related	-	-
12966	PRKWNK3	NM_020922.1	2603	ttggtcgggtgcgattctgtatc	97911	-	kinase related	-	-
12967	PRKWNK4	NM_032387.2	2223	caagacgggattcggagagattatcc	98014	-	see also 9179 line		
12968	PRO2000	NM_014109.2	1224	gaagtgtatagaggctatcaata	98054	-	see also 5494 line		
12969	PRPF4B	NM_003913.3	2692	ttgcaccttaccgaactctata	98232	-	see also 2669 line		
12970	PRSSI5	NM_004793.2	521	atgtcggcgctcttttaaaagaga	98244	-	serine-type endopeptidase	-	-
12971	PSK	NM_016151.1	893	cogggatgtccgggaatagtgagg	332988	-	kinase related, apoptosis	-	-
12972	PSKH1	NM_006742.1	395	aagttgaaccaaggtttacacgc	98268	-	see also 4764 line		
12973	PSKH2	NM_033126.1	339	gggggttagccatcggtacattg	98285	-	kinase related	-	-
12974	PSMC1	NM_002802.2	1033	atggccacaacaccgaatagaaac	98311	-	-	proteasome	-
12975	PSMC2	NM_002803.2	773	gogtcttaattcggagttattgg	98336	-	see also 1819 line		
12976	PSMC3	NM_002804.3	1197	ccgccttgacccgaagatagagt	98373	-	see also 1820 line		
12977	PSMC4	NM_006503.2	267	agggaagtgaagcgaatccaaagc	98375	-	-	-	-
12978	PSMC5	NM_002805.4	660	acggactgtacctttattcgtgt	98410	-	see also 1821 line		
12979	PTK2	NM_005607.3	740	tagaaatacggcgatcatctgg	98459	-	see also 3893 line		
12980	PTK2B	NM_004103.3	2403	tcgtctcccccataaatggtgt	98549	-	see also 2772 line		
12981	PTK6	NM_005975.2	260	gaagtccgaacccgtggtttttgg	98559	-	kinase related	non-membrane spanning protein tyrosine kinase	-
12982	PTK7	NM_002821.3	3012	cagtgccagagacaaagtgaagg	98587	-	receptor activity, kinase related, signal transduction	-	-
12983	PTOV1	NM_017432.2	1178	gtgtgagatccgctgcttatgc	98591	-	-	-	-
12984	PXK	NM_017771.2	617	aggaaacgctagtgttaagctgg	98611	-	see also 7151 line		
12985	QARS	NM_005051.1	1252	tagcctatcgagtcagtataca	98662	-	-	glutamine-tRNA ligase	-

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12986	RAD50	NM_005732.2	1932	caggaccctcgtaaaacttgacc	98742	-	see also 3973 line		
12987	RAF1	NM_002880.1	455	aagccagcttagattggaatact	98834	-	see also 1921 line		
12988	RAGE	NM_014226.1	754	tggattctacacgtacaagaatgg	98892	-	see also 5541 line		
12989	RARSL	NM_020320.2	1556	aggttcacagaggtgctttataa	99950	-	-		
12990	RET	NM_000323.2	1237	cggcgacccgtacatgactatag	99967	-	see also 273 line		
12991	RHOK	NM_002929.1	1343	ccgtgaagtaccctgtataatgc	99009	-	kinase_related, G-protein-coupled		
12992	RICH1	NM_018054.3	176	ctggacacgggtgggtcaaatg	99014	-	receptor_activity, phosphorylating		
12993	RIOK1	NM_031480.2	1254	ttggcccaacgtcaatgatttct	99089	-	signal_transduction protein kinase		Oguchi disease(小口病)
12994	RIPK1	NM_003804.2	1623	tggagcctacaattatattggaga	99147	-	kinase_related, apoptosis,		
12995	RIPK2	NM_003821.4	1036	gagcagctatgactctcttaata	99180	-	signal_transduction	protein tyrosine kinase	-
12996	ROCK1	NM_005406.1	2479	cagcttacgaacacagtagtaggg	99264	-	see also 2603 line		
12997	ROCK2	NM_004850.2	2165	ctggcaacagagctgtgatactgc	99322	-	see also 3772 line		
12998	ROR1	NM_005012.1	1109	gtgactgtgtgcgcatgaatgt	99415	-	see also 3364 line		
12999	ROR2	NM_004560.2	757	tggcaacggccaccatttatgtgg	99471	-	see also 3506 line		
13000	ROS1	NM_002944.2	3615	atgtgcgcttgtaagcttaca	99594	-	receptor_activity, kinase_related,	transmembrane receptor protein	-
13001	RP2	NM_006915.1	1102	atgtcaacttattgttaaacgaga	99728	-	signal_transduction	tyrosine kinase	-
13002	RPS6KA1	NM_002953.2	1398	tagtgaaggctacgtgtgtaaaagg	99741	-	see also 4852 line		
13003	RPS6KA2	NM_021135.3	1931	ctgtacacagggccaatttgg	99761	-	kinase_related,	protein tyrosine kinase	-
13004	RPS6KA3	NM_004586.1	2077	caggatgcaccacacatctagtataa	99814	-	signal_transduction	protein tyrosine kinase	-
13005	RPS6KA4	NM_003942.1	1850	gggagctattctgtacatgatgc	99829	-	see also 3120 line		
13006	RPS6KA5	NM_004755.2	309	ctggcgactgtctaatttgacagg	99832	-	kinase_related,	transcription_regulat	-
13007	RPS6KA6	NM_014496.1	1491	ttgatgcgtatgacacacatcc	99918	-	or		
13008	RPS6KB1	NM_003161.1	737	ttggaactgcaaaagaatctatt	99952	-	see also 3273 line		
13009	RPS6KB2	NM_003952.1	1112	aggacgtgagccagtttataacc	99968	-	see also 5720 line		
13010	RPS6KG1	NM_012424.2	2417	tgggccccaaatcctatagtataa	100039	-	see also 2134 line		
13011	RPS6KL1	NM_031464.2	818	caggcgactccccacatttgg	100077	-	kinase_related,	protein serine/threonine kinase	-
13012	RUVBL1	NM_003707.1	215	gaggcatgtggcgtcatagtaga	100083	-	kinase_related	-	
13013	RUVBL2	NM_006666.1	747	acgagatgacgctcatcaactct	100119	-	transcription_regulat	structural molecule	-

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[illegible]



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13049	STK22C	NM_052841.2	859	cggcctcattgaagaagttta	101575	-	kinase related	-	-
13050	STK23	NM_014370.1	232	aagatcgcgcagctgttcaatgg	101576	-	kinase related	protein kinase OK2	-
13051	STK24	NM_003576.2	492	gaggctcgcgcactagatctatta	101603	-	see also 2373 line	-	-
13052	STK25	NM_006374.3	313	aggtctacaaggcgaatogataac	101628	-	kinase related,	protein tyrosine	-
13053	STK29	NM_003957.1	2143	cggtaagttccaggttgatgc	101643	-	signal transduction	kinase	-
13054	STK3	NM_006281.1	243	agggcttatggaagtgtattta	101648	-	kinase related	-	-
13055	STK33	NM_030906.1	1840	gagcatagcgtcgtcaatgtaca	101721	-	see also 4373 line	-	-
13056	STK36	NM_015690.2	576	cgcctcctacacccagagataga	101759	-	kinase related	-	-
13057	STK38	NM_007271.2	586	tggtaggtacggcttggtaaga	101809	-	see also 5071 line	-	-
13058	STK38L	NM_015000.1	1327	gtgtgactggagacacataaagg	101851	-	see also 6174 line	-	-
							receptor signaling	protein	
							serine/threonine	kinase	
13059	STK39	NM_013233.1	985	gagcagcgccttatcacaatat	101879	-	kinase related	-	-
13060	STK4	NM_006282.2	1379	atggagactacaggtttcttaag	101947	-	see also 4374 line	-	-
13061	STK6	NM_003600.2	1096	ctgtcaattcgaagagaggtatttc	101957	-	-	-	-
13062	SYK	NM_003177.3	2020	cggctgcgaattactactatga	102001	-	kinase related,	protein tyrosine	-
13063	SYN3	NM_003490.2	1043	tggacagctgctcggaatgttt	102013	-	signal transduction	kinase	-
13064	TAP1	NM_000593.4	1078	gtgaacgggactctataaacacacc	102027	-	-	-	-
13065	TAP2	NM_000544.2	137	tgttgacgcggcttactgtgg	102044	-	-	oligopeptide	small cell lung cancer(肺癌)、diabetes(糖尿病)、non-small-cell lung cancer(非小細胞肺癌)
13066	TARS	NM_152295.3	636	cgcacaacacccgttatgtctaaa	102076	-	see also 9832 line	transporter	-
13067	TBK1	NM_013254.2	1128	ggcgacgccttagtcttagaacc	102159	-	kinase related	-	-
13068	TCEB3L2	NM_145653.1	1329	cggcgacagacacaaagatgatct	102199	-	transcription_regulat	-	-
13069	TCPI	NM_030752.1	1132	acgtctgcatcgattatcttacg	102215	-	or	-	-
						-	see also 8925 line	-	-
13070	TEC	NM_003215.1	1882	ttggcgtccaactatgtgtatga	102275	-	non-membrane	spanning protein	extraskelatal myxoid chondrosarcoma(骨外性粘
13071	TEK	NM_000459.1	708	gagtgactcggccaggtatata	102300	-	kinase related	tyrosine kinase	液性軟骨肉腫)、chondrosarcoma(軟骨肉腫)
13072	TESK1	NM_006285.1	1801	caggaccgcgtcctcaataacaat	102383	-	see also 358 line	-	-
13073	TESK2	NM_007170.1	1107	caggccgatccggactatcttcc	102402	-	kinase related,	protein tyrosine	-
13074	TEX14	NM_031272.2	1611	aagatattccggtatattctgaag	102452	-	apoptosis	kinase	-
13075	TGFBR1	NM_004612.1	1221	aagttctcgatgattccataaat	102550	-	see also 8999 line	-	-
						-	see also 3133 line	-	-

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13076	TGFB2	NM_003242.3	2008	ctgaagacggctccctaaacact	102584	-	receptor activity, signal transduction, kinase related	thyroid cancer(甲状腺癌), colorectal carcinoma(大腸癌), colorectal cancer(大腸癌), esophageal cancer(食道癌), breast cancer(乳癌), pancreatic cancer(膵臓癌), small cell lung cancer(肺癌), Ewing's sarcoma(尤文氏肉腫), pleuropulmonary blastoma(胸膜肺芽腫), colorectal cancers(結腸直腸癌), non-small-cell lung cancer(非小細胞肺癌), malignant mesothelioma(悪性中皮腫), gastric cancer(胃
13077	TIE	NM_005424.2	556	gagcaacggatcctacttctaca	102587	-	type II transforming growth factor-beta receptor	-
13078	TIMM4	NM_006351.2	180	ctgtccgcttgctagataatgt	102619	-	transmembrane receptor protein tyrosine kinase	-
13079	TK1	NM_003288.1	528	ccgggaagccgcctataccaaga	102642	-	see also 4444 line	-
13080	TK2	NM_004614.2	666	gggtcttacgctacagacttatg	102647	-	kinase related	thymidine kinase Smad3/Sp-1
13081	TLK1	NM_012290.3	741	ggagcgtatagatgattgtctca	102672	-	kinase related	heterodimer
13082	TNK1	NM_003985.1	614	gcgagaggtatcgtctatgata	102728	-	see also 5257 line	-
13083	TOM1L2	NM_144678.2	355	ttgtggccaaccgagatttcac	102735	-	kinase related	-
13084	TOPK	NM_018492.2	1032	taggccacctattaatatgggaag	102769	-	kinase related	-
13085	TOR1B	NM_014506.1	803	ctgtcggagcttccaataataa	102787	-	heat shock protein	-
13086	TPX2	NM_012112.4	2211	ggaggacgaaccgtagtgataaa	102828	-	GTP binding	-
13087	TRA1	NM_003299.1	827	taggcgagggaacgacaaattacc	102862	-	see also 2230 line	-
13088	TRAD	NM_007064.1	1729	ctgcaatgcccatcgagttatca	102888	-	see also 4944 line	-
13089	TRAP1	NM_016292.1	816	gagatgtggttaacgaagtacagc	102956	-	tumor necrosis factor receptor ligand	-
13090	TRAP100	NM_014815.1	602	ctgtgcacatcgcccaactaga	102983	-	see also 6010 line	-
13091	TRAP150	NM_005119.1	513	atggaaactaccgctcaaatgg	103012	-	see also 3590 line	-
13092	TRB2	NM_021643.1	1385	ttgtcgcattgctttctgtat	103064	-	see also 8162 line	-
13093	TRIO	NM_007118.1	8370	ttgcgccttagacttagcttcc	103215	-	kinase related, phosphatase, signal transduction receptor activity, transcription regulation cofactor	protein serine/threonine kinase
13094	TRIP13	NM_004237.2	974	aagcattccaatgttggttc	103240	-	see also 6526 line	-
13095	TRPC4P	NM_015638.1	1709	tggacagcgagtgtaagtcagg	103289	-	see also 7087 line	-
13096	TRPM6	NM_017662.3	2312	atgacgctgttgacgtatgaact	103345	-	see also 7091 line	-
13097	TRPM7	NM_017672.2	2203	ctgtaagatctatcgttcaatgg	103531	-	see also 10073 line	-
13098	TTBK2	NM_173500.2	2936	gtgcgaagtgtaagttccattca	103698	-	-	-
13099	TTCl2	NM_017888.2	1757	ctgcacacgttatgctataaag	103775	-	-	-
13100	TTK	NM_003318.3	1768	ttgatatgtaccggaacgaata	103836	-	kinase related, cell cycle	protein tyrosine kinase
13101	TTN	NM_003319.2	9522	atgttcgcatccgaagtataa	104080	-	see also 2250 line	-

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13102	TXK	NM_003328.1	1251	aggatttgcggcaaggaattg	107043	-	kinase related	non-membrane spanning protein tyrosine kinase	-
13103	TXL-2	NM_178130.2	532	ctgtaccttgcccatattaac	107066	-	kinase related	-	-
13104	TXNDC3	NM_016616.2	1327	ttggcattacttcgaccatatt	107107	-	kinase related	-	-
13105	TYK2	NM_003331.3	1835	gagcttgccgctcgaagtcc	107134	-	see also 2256 line	-	-
							receptor activity, kinase related, signal transduction	transmembrane receptor protein tyrosine kinase	rheumatoid arthritis(関節リウマチ)
13106	TYRO3	NM_006293.2	2758	gtgactgtcggtacatactacc	107176	-	kinase related, signal transduction	uridine kinase	-
13107	UCK1	NM_031432.1	422	gtgaggtgcgcgacctatgatt	107181	-	kinase related	protein tyrosine kinase	-
13108	ULK1	NM_003565.1	811	ctgcggtcccccctgacatgg	107187	-	kinase related, signal transduction	kinase	-
13109	ULK2	NM_014683.2	982	ttgctcgttacctacatagtaac	107208	-	see also 5884 line	-	-
	UMP-								
13110	CMPK	NM_016308.1	111	ctgctctccagctctcatgaagc	107256	-	kinase related	uridine kinase	-
13111	UMPK	NM_012474.3	665	cggtctctcacgagattattag	107276	-	kinase related	uridine kinase	meningitis(髄膜炎)
13112	URKL1	NM_017859.1	523	ttgacttcgacctcatcttcc	107282	-	kinase related	uridine kinase	-
13113	VARS2	NM_006295.1	3305	gtgcctgaacctgtactgaatg	107312	-	see also 4390 line	-	-
13114	VCP	NM_007126.2	537	aagtaaggcaaacgtatccatgt	107325	-	-	adenosinetriphosphatase	-
13115	VPS11	NM_021729.3	667	gagacgctcagctctcatatagt	107363	-	-	-	-
13116	VPS4A	NM_013245.2	1387	cagacgacctctctgaagtgaag	107415	-	see also 5363 line	-	-
13117	VPS4B	NM_004889.2	944	gtgaagccgacgctagataaag	107431	-	transcription regulator or	peroxisome assembly ATPase	-
13118	VRK1	NM_003384.1	375	tcgtaccctgaagctgaagtacc	107465	-	see also 2280 line	-	-
13119	VRK2	NM_006296.2	867	cagacgaagtgcgttgatgcc	107506	-	see also 4391 line	-	-
13120	VRK3	NM_016440.2	381	cggtcacctctcccgattatcc	107531	-	kinase related	-	-
13121	WARS	NM_004184.2	475	aggcatagactacgataagctca	107543	-	-	tryptophan-tRNA ligase	-
13122	WARS2	NM_015836.1	397	atggctcagactactcgtattaca	107581	-	-	tryptophan-tRNA ligase	-
13123	WEE1	NM_003380.2	2012	atgaagtcctccggtatatacaca	107613	-	see also 2287 line	-	-
13124	XAB1	NM_007266.1	822	aaggagatctgctcgtgaatg	107671	-	signal transduction	-	-
13125	YES1	NM_005433.2	839	ttgcgactagagggttaactagg	107693	-	kinase related	protein tyrosine kinase	-
13126	YME1L1	NM_014293.2	955	ctgtccgcttcggacacaaca	107730	-	see also 5570 line	-	-
13127	ZAK	NM_016653.1	533	ttgtgctctcgggttcataac	107777	-	see also 6967 line	-	-
13128	ZAP70	NM_001079.2	721	aggagccgagcgcaaaccttac	107845	-	kinase related	-	selective T-cell defect(選択的T細胞欠損症)
13129	ZWCC3	NM_015358.1	2733	ccgatatcttcgagttacgtag	107941	-	-	ATP binding	-
13130	CNGA3	NM_001298.1	252	caggctgctcgccctcatctct	107944	-	see also 858 line	-	-
13131	EPAC	NM_006105.2	1001	gggcacttcgtgtacattatct	107963	-	kinase related, signal transduction	-	-
13132	HCN3	NM_020897.1	383	ttgatctgcttcaacgtattgt	107978	-	see also 8020 line	-	-
13133	HCN4	NM_005477.1	2520	ctggccgagcggtctctacttgg	108004	-	channel	-	-

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13134	PRKARIA	NM_002734.2	454	atcgagcatctatgttagaag	108016	-	see also 1773 line			
13135	PRKAR2A	NM_004157.1	1263	atgcttagttatggtatgaag	108084	-	see also 2797 line			
13136	PRKAR2B	NM_002736.1	1346	aggaacatogctactactatgaaga	108094	-		kinase related	cAMP-dependent protein kinase, regulator	-
13137	ACAS2	NM_018677.2	2064	agggagtgctctggaagattgc	108124	-	see also 7550 line			
13138	ADSS	NM_001126.2	881	aagttctagtaaccaatacaaa	108134	-	see also 714 line			
13139	ADSSL1	NM_152328.3	1094	ctggctgacactgatgattctaa	108175	-	-	-	-	-
13140	APMCF1	NM_021203.2	263	aggtgttaacaggcccttag	108192	-	see also 8138 line			
13141	ARF1	NM_001658.2	233	tggaaacogtggagtaacaagaac	108208	-	signal transduction	small monomeric GTPase		-
13142	ARF4	NM_001660.2	639	agggcttcagctctcttctaaca	108219	-	signal transduction	protein transporter		-
13143	ARF4L	NM_001661.1	433	cggacagacggctctagttgt	108222	-	signal transduction	ARF small monomeric		-
13144	ARF6	NM_001663.2	1018	atgttaacctctaactacaat	108240	-	see also 1096 line			
13145	ARF1	NM_001656.2	1237	tcggctgttacgttagattgg	108279	-	see also 1095 line			
13146	ARFIP2	NM_012402.2	933	caggccatcgggacaagatga	108314	-	see also 5310 line			
13147	ARFRP1	NM_003224.2	430	cggcgtcatctacgtcattgact	108326	-	see also 2183 line			
13148	ARHA	NM_001664.1	375	cagatacagatgttatactgatg	108329	-		Rho small monomeric	breast cancer(乳癌)、Alzheimer disease(アルツハイマー病)	-
13149	ARHB	NM_004040.1	224	cggacacccagctcattctcctatg	108336	-	signal transduction	Rho small monomeric		-
13150	ARHD	NM_014578.2	384	tggtaaccagaagtgaatcattt	108341	-	signal transduction	Rho small monomeric		-
13151	ARHE	NM_005168.2	647	tggagcagctacttatatcgaat	108359	-	see also 3637 line			
13152	ARHF	NM_019034.2	566	ctggaatgttcgcccaagtttcg	108368	-	signal transduction	Rho small monomeric		-
13153	ARHG	NM_001665.1	384	cagtcgccgctcctctatgagaacg	108371	-	cell cycle, signal transduction	Rho small monomeric		-
13154	ARHGAP1	NM_004308.2	976	gtggaatttcgaccagctacaatga	108386	-	signal transduction	SH3/SH2 adaptor protein		-
13155	ARHGEF5	NM_005435.2	1546	gtgcagcaggtggaggttcatttc	108397	-		guanyl-nucleotide release factor		-
13156	ARHH	NM_004310.1	830	ctgtggcccaaccataactcattc	108399	-	kinase related, transcription, regulat or, signal transduction	Rho small monomeric GTPase		-
13157	ARHI	NM_004675.1	325	cggcaacttcgctcatgatacc	108401	-	signal transduction, cell cycle, kinase related	small monomeric GTPase	small cell lung cancer(肺癌)	-
13158	ARHJ	NM_020663.2	876	tggccctgttgcctgtatgaaa	108412	-	signal transduction	-		-
13159	ARHN	NM_005440.2	630	gggggaatgagggcgagatacaca	108421	-	signal transduction	Rho small monomeric		-
13160	ARHT1	NM_018307.2	871	gtgcttcgacgatttgggtatga	108441	-	see also 7378 line			
13161	ARHT2	NM_138769.1	1524	gtgacgttgctgctgtgatgtt	108485	-	signal transduction	-		-

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13162	ARHU	NM_021205.3	1278	tgcgtcgtgcattcaatactcg	108493	-	signal transduction	-
13163	ARHV	NM_133639.2	545	ggagagatgtcaacgtactaatt	108494	-	signal transduction	-
13164	ARL1	NM_001177.3	271	aagttgttactactatcacctacc	108501	-	signal transduction	small monomeric GTPase
13165	ARL3	NM_004311.2	581	aggactgaacgtgcataccatcc	108521	-	signal transduction	small monomeric GTPase
13166	ARL5	NM_012097.2	822	atgtcaagacttaagattagatg	108542	-	see also 5127 line	-
13167	ARL6	NM_032146.3	713	cogtgaattccaattcttattct	108556	-	see also 9083 line	-
13168	ARL6P2	NM_022374.1	485	gtgattgacagacttaaggaac	108574	-	see also 8355 line	-
13169	ARL8	NM_178815.2	520	aggggaacgactagctattacaaa	108628	-	signal transduction	-
13170	C14orf159	NM_024952.3	1672	aagacgcagactcccgattataac	108645	-	-	-
13171	CDC42	NM_001791.2	416	ctgtccaaagactccttcttgc	108668	-	-	-
13172	DIRAS2	NM_017594.2	97	ctgggtgtgaggtttgtgaagg	108672	-	signal transduction	-
13173	DKFZP564J0663	NM_015459.2	573	atgtacagatactattattctca	108678	-	-	-
13174	DNGLI1	NM_016141.1	1402	aaggcgttctggcaaatcttctc	108742	-	see also 6690 line	-
13175	DNM1	NM_004408.1	1638	ctggctgactatcaataatattg	108759	-	-	motor
13176	DNM1	NM_005690.2	1895	aggtattgaacgactcattaaa	108828	-	see also 3950 line	-
13177	DNM2	NM_004945.1	1515	gcgaatcgtcaccattaccatcc	108861	-	see also 3443 line	-
13178	DRG2	NM_001388.3	273	tgggtaagtcacacattcttgagt	108867	-	signal transduction	GTP binding
13179	FLJ10101	NM_024718.2	928	toggcctaaagtaccttctcaag	108884	-	signal transduction	-
13180	FLJ10702	NM_018184.1	359	aaggtaacgtcacataaagatgc	108899	-	signal transduction	-
13181	FLJ10849	NM_018243.2	1048	ttgtacacagctgtgaagcttga	108928	-	cell cycle	-
13182	FLJ21665	NM_024803.1	836	ctgtgacttctcgagaataca	108946	-	-	-
13183	FLJ22595	NM_025047.1	736	ggagacacttggcgtcttccaag	108965	-	signal transduction	-
13184	FLJ22655	NM_024730.2	737	ggagagtcctccagtgagatctaat	108974	-	signal transduction	-
13185	FLJ25410	NM_144605.1	480	gggtacatacaacgagcaatacg	108978	-	cell cycle	-
13186	FLJ39249	NM_173664.2	667	tgggtctacaggctatcgataac	108990	-	-	-
13187	GBP1	NM_002053.1	661	cagatgagataccigacatactcc	108992	-	-	RNA polymerase II transcription factor
13188	GBP2	NM_004120.3	870	tggagcttctcgctaagctaaga	108996	-	-	GTPase
13189	GBP3	NM_018284.1	1862	ggatataatgtcgcataagctaa	109021	-	-	-
13190	GBP4	NM_052941.2	1878	ttgacatgctagcaacataatg	109034	-	-	-
13191	GBP5	NM_052942.2	2244	cagaggaactgttaataacgatga	109051	-	-	transcription factor
13192	GEM	NM_005261.2	696	cggggacgcatacatgtattgtct	109055	-	signal transduction	-
13193	GNA12	NM_007353.1	501	cagccggagaaagcgagtttcagc	109062	-	signal transduction	signal transducer
13194	GNA13	NM_006572.3	543	ccggcgctggagaaatttcaactgg	109081	-	see also 4606 line	-
13195	GNA14	NM_004297.2	783	tggcacagctcaagatacagtat	109100	-	see also 2880 line	-
13196	GNA15	NM_002068.1	1146	gaggttcatctctggacatgtaca	109120	-	see also 1335 line	-
13197	GNAI1	NM_002069.4	985	aggagtagcggcgatcatcttct	109141	-	gpcr, signal transduction	signal transducer

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13198	GNAI2	NM_002070.1	546	tggcgcgtcaaggaataaccagc	109150	-	gpcr、 signal_transduction	signal transducer	adrenal cortical tumor(副腎皮質腫瘍)、pituitary adenoma(下垂体腺腫)、ventricular tachycardia(心室頻拍症)
13199	GNAI3	NM_006496.1	305	tgggacgctaaagattgacttt	109163	-	gpcr、 signal_transduction	signal transducer	-
13200	GNAI	NM_002071.1	765	cagcgcagcttggtgactaca	109193	-	see also 1336 line	-	-
13201	GNAO1	NM_020988.1	394	tggggcgcactcaggaatccaaga	109213	-	signal_transduction gpcr	receptor signaling protein	-
13202	GNAS	NM_000516.3	985	cagaatttgctcgctacactact	109228	-	gpcr、 signal_transduction	-	Albright hereditary osteodystrophy(アルブライト 遺伝性骨ジストロフィ)、McCune-Albright syndrome(マクキューン・オルブライト症候群)、 panostotic fibrous dysplasia(線維性骨異形成)、 pseudohypoparathyroidism(偽性副甲状腺機能低 下症)、erythroid leukemia(赤白血病)
13203	GNAT1	NM_000172.2	919	acgtctcttcgagaagatcaag	109244	-	gpcr、 signal_transduction	-	night blindness(夜盲症)
13204	GNAT2	NM_005272.2	920	aagatgacgaagtgatcgtatg	109255	-	gpcr、 receptor_activity、 signal_transduction	GTP binding	achondroplasia(軟骨形成不全症)
13205	GNAT	NM_002073.1	1027	gcggtagacagcgtcatcataca	109266	-	see also 1338 line	-	-
13206	GNL1	NM_005275.2	1250	aggctacgaccaccaatcgatacc	109271	-	signal_transduction	GTP binding	-
13207	GTPBP4	NM_012341.1	1584	ggagaaggagatcgtcgtcttgg	109334	-	see also 5299 line	-	-
13208	GTPBP5	NM_015666.2	1175	gtggaactcaagttgaagatttaa	109349	-	-	-	-
13209	KBRAS2	NM_017595.4	304	gcgagagcaggtgcgttttatg	109410	-	kinase_related、 signal_transduction	-	-
13210	KIAA0820	NM_015569.1	1572	aggaccagattgctattgatt	109449	-	see also 6486 line	-	-
13211	LOC51277	NM_016544.1	87	caggctctccgcatacaaatga	109491	-	see also 6910 line	-	-
13212	LOC51762	NM_016530.1	498	ggggaagcgtagcaattgactat	109519	-	signal_transduction	protein transporter	-
13213	MEL	NM_005370.4	520	cggaaactgagttgcacacattga	109530	-	-	protein transporter	-
13214	MGC10731	NM_030907.2	518	cagcagccgtgctcgtatgttc	109548	-	signal_transduction	-	-
13215	MGC2827	NM_023940.2	333	ccggttctctccaccaaacgattca	109558	-	signal_transduction	-	-
13216	MGC4083	NM_032525.1	202	gagtcacgtctcgaataatgt	109566	-	-	-	-
13217	MGC9726	NM_177403.3	764	atgtgggtcaagcgtttgagatg	109578	-	-	-	-
13218	MRAS	NM_012219.2	159	aagaactctacctgaacatacag	109582	-	signal_transduction	RAS small monomeric	-
13219	MSF	NM_006640.2	1230	aagtcacatcacgcacgatattga	109592	-	cell_cycle	-	-
13220	MX1	NM_002462.2	854	atgtcccgagatcgtactaata	109608	-	signal_transduction apoptosis	antiviral response protein	-
13221	MX2	NM_002463.1	1752	cagagcacgattgaagacataaa	109647	-	-	antiviral response protein	-
13222	NEDD5	NM_004404.1	732	tggactaaagcccttagatgtgg	109668	-	cell_cycle	GTPase	-
13223	NRAS	NM_002524.2	445	cagtgccatgagagaccaataca	109675	-	cell_cycle、 signal_transduction	pre-mRNA splicing factor	congenital neutropenia(コストマン型先天性好中 球減少症)、breast cancer(乳癌)、 neuroblastoma(神経芽細胞腫)、melanoma(メラ

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13224	OPA1	NM_015560.1	428	atgataccggagacccttagtgaata	109695	-	see also 6473 line	phosphoenolpyruvate carboxykinase deficiency (ホスホエノールピルビン酸カルボキシキナーゼ欠乏症)
13225	PKC1	NM_002591.2	188	ctgaacacctctcggcccaagtgtgt	109790	-	kinase_related	phosphoenolpyruvate carboxykinase deficiency (ホスホエノールピルビン酸カルボキシキナーゼ欠乏症)
13226	PKC2	NM_004563.1	1437	agggtgaccctcgtgtatacagagg	109829	-	-	-
13227	PGPL	NM_012227.1	718	gagtcggtcgcgtacatcatg	109836	-	-	-
13228	PNUT1	NM_002688.2	1100	acgcgagactgagaagcttato	109842	-	cell_cycle	-
13229	PNUTL2	NM_004574.2	1066	ttggaatcaagatctatcaattc	109853	-	see also 3111 line	-
13230	PTD004	NM_013341.2	600	ctgttcgtctctatcatgattgg	109881	-	-	-
13231	RAB11A	NM_004663.3	339	gagcgatatcgagctataacatc	109888	-	see also 3184 line	-
13232	RAB11B	NM_004218.1	485	acgtagaggaagcattcaagaac	109904	-	signal_transduction	protein transporter
13233	RAB14	NM_016322.2	407	ctgttacacggagctactacaga	109914	-	see also 6810 line	-
13234	RAB17	NM_022449.1	1148	cagggtcggagggtgttcaatc	109931	-	signal_transduction	protein transporter
13235	RAB18	NM_021252.3	286	gaggtgcacagagggtgttatata	109937	-	see also 8145 line	-
13236	RAB1A	NM_004161.2	188	atgaatccgaatattgattattt	109950	-	see also 2798 line	-
13237	RAB2	NM_002865.1	332	gagttcgggtcgtcgaatgataac	109977	-	-	protein transporter
13238	RAB20	NM_017817.1	659	gaggtcgggtggccctttataa	109994	-	signal_transduction	small monomeric GTPase
13239	RAB21	NM_014999.1	372	ctgcgagacaaagtttaacgaca	110002	-	signal_transduction	protein transporter
13240	RAB22A	NM_020673.2	465	gtgcttagtaccacaaatgtactat	110023	-	see also 7914 line	-
13241	RAB23	NM_016277.3	1162	cagaactaacacattcaagtagt	110057	-	signal_transduction	protein transporter
13242	RAB24	NM_130781.1	818	gagggctgcacaaatctactatg	110070	-	signal_transduction	-
13243	RAB27A	NM_004580.3	856	atgcctctacggatcagttgaagt	110085	-	see also 3119 line	-
13244	RAB27B	NM_004163.3	566	ctgacaaatattggcacaaccat	110092	-	signal_transduction	RAB small monomeric
13245	RAB28	NM_004249.1	637	cagatgagaatctgttcagtaca	110106	-	signal_transduction	RAB small monomeric
13246	RAB2B	NM_032846.2	697	cagcggaaactctgtgacatagg	110117	-	see also 9310 line	-
13247	RAB30	NM_014488.3	464	aagagagatttgggtccattacc	110124	-	see also 5704 line	-
13248	RAB31	NM_006868.2	188	aagcatcgtgtcgtattgtcc	110134	-	see also 4807 line	-
13249	RAB32	NM_006834.2	436	aggagcgtattggcaacatgacc	110148	-	signal_transduction	RAB small monomeric
13250	RAB33A	NM_004794.2	564	aagcatggtgagcattactacc	110158	-	signal_transduction	RAB small monomeric
13251	RAB33B	NM_031296.1	966	atgaccttggctcataaagcttaa	110190	-	see also 9007 line	-
13252	RAB34	NM_031934.3	1205	tgtgagaatgtccagaaattct	110206	-	see also 9056 line	-
13253	RAB35	NM_006861.4	445	gcggttggttccagaaatcaacc	110214	-	see also 4806 line	-
13254	RAB36	NM_004914.2	388	ggggaactgtgggctcaactct	110223	-	signal_transduction	protein transporter
13255	RAB37	NM_175738.2	711	ccgaagctgaaccactgtattt	110226	-	signal_transduction	protein transporter
13256	RAB38	NM_022337.1	128	gcgtactgacccagaaactct	110236	-	see also 8331 line	-
13257	RAB39	NM_017516.1	232	caggagcgggttcagatcaataac	110252	-	-	-
13258	RAB3C	NM_138453.2	462	aagattggtcactcaaatcaaa	110290	-	signal_transduction	-

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13259	RAB3D	NM_004283.2	579	aggagctggcgccacccaatacaag	110295	-	signal_transduction	protein transporter	-
13260	RAB40C	NM_021168.1	139	cagtaacggggtgactacaaga	110298	-	signal_transduction	-	-
13261	RAB4A	NM_004578.2	434	aggtccgtgacgaggaattatta	110307	-	see also 3117 line	-	-
13262	RAB4B	NM_016154.2	1172	cggctcagtgacgcggagttatta	110324	-	-	protein transporter	-
13263	RAB5A	NM_004162.3	458	gagtcgcctgttggaatacaag	110330	-	see also 2800 line	-	-
13264	RAB5B	NM_002868.2	252	aagtcacgcctggtattcggtt	110351	-	-	protein transporter	-
13265	RAB5C	NM_004583.1	179	ctgggaacaagatctgcaatt	110366	-	signal_transduction	protein transporter	-
13266	RAB7	NM_004637.5	768	aggtggagctgtacaacgaattt	110391	-	-	-	Charcot-Marie-Tooth neuropathy(シヤルコー・マリー・トースネフロパシー)
13267	RAB7L1	NM_003929.1	190	gtggtctgactacggagatagtc	110395	-	signal_transduction	protein transporter	-
13268	RAB9B	NM_016370.1	349	tcgcttatgaacgcgttaacgaac	110410	-	see also 6842 line	-	-
13269	RABL4	NM_006860.2	595	tgggagagagtcaccaatgtcttatg	110421	-	signal_transduction	small monomeric GTPase	-
13270	RAC3	NM_005052.2	365	cgggcctcttcgagaatgttcg	110432	-	-	Rho small monomeric	-
13271	RALA	NM_005402.2	515	aggagagactacgctgcaattaga	110442	-	see also 3770 line	-	-
13272	RAN	NM_006325.2	198	acgtcatttgactgggaatttg	110473	-	signal_transduction, cell_cycle	protein transporter	-
13273	RAP1A	NM_002884.1	545	ttgcactagatattctattaca	110573	-	signal_transduction, cell_cycle	RAS small monomeric	-
13274	RAP1B	NM_015646.3	181	aagtcctgttgactgtacaatt	110580	-	-	RAS small monomeric	-
13275	RAP2A	NM_021033.3	684	tggaaactccgcgaagaataaa	110586	-	see also 8070 line	-	-
13276	RAP2C	NM_021183.3	1302	aagatcagttgtgtacaactgtg	110604	-	see also 8117 line	-	-
13277	RASD1	NM_016084.3	248	gagcgactcggagcgtgagtatcc	110605	-	signal_transduction, gpcr	-	-
13278	RASD2	NM_014310.3	798	cggccctgcctgcgaagatctcc	110610	-	signal_transduction	molecular_function unknown	-
13279	REM	NM_014012.4	746	cagtgctatgctatcgtatatact	110612	-	signal_transduction	-	-
13280	REG	NM_032918.1	341	gggcaagtcagcctctgttagtga	110617	-	see also 9345 line	-	-
13281	RHEBL1	NM_144593.1	627	ctgggggtgcgacatttatggagt	110639	-	see also 9707 line	-	-
13282	RHO6	NM_014470.2	309	caggtatccctactactacgataat	110650	-	signal_transduction	Rho small monomeric	-
13283	RHOBTB1	NM_014836.3	1769	acgttctcgagcgtgacatttaa	110690	-	signal_transduction	-	-
13284	RHOBTB2	NM_015178.1	351	tggccatcgacccaataatcgtgt	110706	-	see also 6269 line	-	-
13285	RIS	NM_016563.2	336	ctgaccaagagggtttatcctgtga	110724	-	signal_transduction	-	-
13286	RT1	NM_006912.2	636	ctgctgataccctactactatatt	110742	-	signal_transduction	-	-
13287	RT2	NM_002930.1	530	aggtccgccacacctatgaaatt	110755	-	see also 1971 line	-	-
13288	RRAD	NM_004165.1	685	cggcgtgcacggcaaacagatga	110764	-	signal_transduction	small monomeric GTPase	diabetes mellitus(糖尿病), diabetes(糖尿病)
13289	RRAGA	NM_006570.3	749	tggatgagcgtctacaagc	110776	-	-	-	-
13290	RRAGB	NM_006064.2	1205	cagcgtatgcccattatgga	110797	-	signal_transduction	-	-
13291	RRAS2	NM_012250.3	731	tagcacggcagcttaaggtaaca	110819	-	-	-	-



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13292	SARA1	NM_020150.3	396	cagcaataataggattgtgttt	110831	-	signal transduction	small monomeric GTPase	-
13293	SARA2	NM_016103.2	499	ttgctaattgtcctatactgatt	110845	-	-	small monomeric GTPase	-
13294	1.Sep	NM_052838.2	655	ccggcaggtacacagagaagtca	110860	-	cell cycle	GTP binding	-
13295	10.Sep	NM_144710.2	1710	aggacaaggacgtgaagaatcc	110879	-	cell cycle	-	-
13296	3.Sep	NM_019106.4	628	gcgacctctggactcttgagttca	110885	-	cell cycle	-	-
13297	6.Sep	NM_015129.4	266	atggcagccagccgatatagctcg	110891	-	cell cycle	protein binding	-
13298	SGNE1	NM_003020.1	589	aggacagagactgataatgttg	110911	-	signal transduction	enzyme activator	-
13299	SRPR	NM_003139.2	312	tcggctgtttcgggacaagtacc	110912	-	see also 2120 line	-	-
13300	SUCLG1	NM_003849.1	327	gagcaacggcttcgtcattat	110940	-	-	succinate-CoA ligase (GDP-forming)	-
13301	TUBA1	NM_006000.1	366	atgccgtgtcactataccatt	110950	-	-	structural molecule	-
13302	TUBA4	NM_025019.1	443	tggagtgcttctgttaactat	110954	-	-	-	-
13303	TUBA8	NM_018943.1	1379	gggactgattcttgaagaaga	110963	-	-	structural molecule	-
13304	TUBB1	NM_030773.1	222	cagcattcgatctagcaaatag	110969	-	-	-	-
13305	TUBB4Q	NM_020040.2	731	gggtacocctctgtcagtaaga	110983	-	-	structural molecule	-
13306	TUBD1	NM_016261.1	811	atgctragtggttcgaacattcc	111012	-	-	structural constituent of cytoskeleton	-
13307	TUBE1	NM_016262.3	570	atgtcataacctcaacctataat	111043	-	-	structural constituent of cytoskeleton	-
13308	TUBG1	NM_001070.3	603	gtggtgtccagccttacaattc	111063	-	-	structural constituent of cytoskeleton	-
13309	TUBG2	NM_016437.1	739	aagctagtcagacttattcagt	111065	-	-	structural molecule	-
13310	VTS58635	NM_033315.2	346	tcgtgcgccagttctgtacaac	111068	-	signal transduction	-	-
13311	ZNF179	NM_007148.2	1483	gaggaggttcgaggagatgtga	111073	-	-	zinc binding	-
13312	CNGA1	NM_000087.1	1018	tgggtacacctgatattatga	111106	-	see also 66 line	-	-
13313	PDE10A	NM_006661.1	1525	gtgcattaccgggttaacgatgg	111180	-	see also 4709 line	-	-
13314	PDE5A	NM_001083.2	812	ctgtatcccttagaatggaaca	111222	-	see also 677 line	-	-
13315	C5orf3	NM_018691.1	1198	ccgaaatgctacactatctcagg	111289	-	see also 7564 line	-	-
13316	LOC56851	NM_020154.1	228	aagagcacgtcgggttccttaag	111307	-	see also 7772 line	-	-
13317	BIRC1	NM_004536.1	511	gagccgtacagctcatgatacc	111332	-	apoptosis	nucleotide binding	amyotrophic lateral sclerosis(遺伝性筋萎縮性側索硬化症)、spinal muscular atrophy(脊髄性筋萎)
13318	DHRS3	NM_004753.3	962	gagagagatccacaaattctcagg	111357	-	-	-	-
13319	NOX4	NM_018931.2	1481	aagtcatttgaggaaatcaactga	111381	-	-	-	-
13320	SLC22A4	NM_003059.2	1159	ctgttcaggactcggaaatttgc	111395	-	-	-	-
13321	ABT1	NM_013375.2	242	gaggtggagcgcgtcttcttca	111412	-	see also 5413 line	-	-
13322	AIP	NM_003977.1	187	gagctccgggactttcaagatgg	111422	-	transcription_regulator or	transcription co-activator	-

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13323	BRDT	NM_001726.1	1697	tggcgagtagttcacataaac	111473	-	transcription_regulat or, kinase_related	-
13324	CRSP2	NM_004229.2	395	acgccaaactcttgcgtgattat	111517	-	receptor_activity, transcription_regulat or,	-
13325	CRSP7	NM_004831.2	1197	tcgagactatacgggttaacttgg	111678	-	receptor_activity, transcription_regulat or	-
13326	CRSP8	NM_004269.2	667	gggataataacgagaatgtotaca	111699	-	transcription_regulat or	-
13327	CRSP9	NM_004270.3	525	aagcacctgggaacgagtaattga	111719	-	receptor_activity, transcription_regulat or	-
13328	DTX1	NM_004416.1	850	gcgcataggacggcctacgatag	111729	-	transcription_regulat or,	-
13329	GCN5L2	NM_021078.1	878	tggctactacaaggctcaattac	111738	-	transcription co- activator	-
13330	GTF2A1	NM_015859.1	907	cagccaatgggtgcccataatc	111766	-	transcription_regulat or	-
13331	HCF-2	NM_013320.1	895	gagtggaaccaccctagatcaga	111804	-	transcription_regulat or	-
13332	HSGT1	NM_007265.1	1924	cagactaccgtatacaaatcaga	111895	-	see also 5063 line	-
13333	NGO1	NM_003743.3	3086	aggggggtggattagattatta	112014	-	see also 2559 line	-
13334	NCOA2	NM_006540.1	4441	atgggtcccagagcaggttaattga	112129	-	see also 4581 line	-
13335	NCOA3	NM_006534.2	950	gtggcaacgcccattactactacagg	112153	-	see also 4567 line	-
13336	NCOA4	NM_005437.1	420	tcgtattggggccagttcaattg	112247	-	see also 3791 line	-
13337	NRIP1	NM_003489.1	3731	aagcgtgctaaccgataaagaag	112347	-	transcription_regulat or	-
13338	PCBD	NM_000281.1	313	aagtagcagtggtccatgacatag	112356	-	see also 245 line	-
13339	PMF1	NM_007221.1	146	ccggcagctaccagagagatcact	112357	-	-	-
13340	RNF14	NM_004290.3	1532	tagcaggatgtatacaagatgaca	112390	-	see also 2874 line	-
13341	SMARCD2	NM_003077.2	1322	ccgttaactccgccagatcttca	112403	-	see also 2072 line	-
13342	SMARCD3	NM_003078.2	1183	aagacggcgtgctatgacatga	112413	-	see also 2074 line	-
13343	SNW1	NM_012245.2	171	aggctgataacctcggttattag	112420	-	transcription_regulat or	transcription co- activator
13344	TA7	NM_005642.2	1133	ctggaaaccaggaattactctgc	112459	-	see also 3915 line	-
13345	TAZ	NM_015472.3	1096	atgagatccatcaactaataatag	112479	-	transcription_regulat or	-
13346	TCERG1	NM_006706.2	43	gggagagaggaacgattcaacc	112487	-	see also 4731 line	-
13347	TGFB11	NM_015927.3	874	gagcgcttctgccaaagatgtgg	112569	-	transcription_regulat or	-
13348	TNRC11	NM_005120.1	5718	ccgtctgtgcgttaccatgc	112654	-	see also 3592 line	-

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13349	TRAP95	NM_005481.2	450	atgccgacggcagatcaagtc	112674	-	receptor activity, transcription_regulat	-	
13350	TRIM32	NM_012210.2	1296	ctgaccgtgtaactatgtata	112709	-	transcription_regulat	-	
13351	TRIP11	NM_004239.1	4795	aagcgtttacaagagactaacatg	112816	-	transcription_regulat	zinc binding	
13352	TRIP4	NM_016213.2	1130	cagccactgacaaattggatag	112877	-	transcription_regulat	transcription co- activator	
13353	UTF1	NM_003577.1	363	cgcctacaagttccttaagaca	112894	-	see also 6724 line transcription_regulat	-	
13354	VGLL1	NM_016267.2	911	ctggggccaccacacatgatacc	112913	-	transcription_regulat	-	
13355	CALR	NM_004343.2	773	ctgggacaagcccagagcatatcc	112923	-	transcription_regulat	transcription co- repressor	
13356	CREG	NM_003851.1	330	cagcggcggtgccctattttacc	112930	-	transcription_regulat	-	
13357	HD	NM_002111.4	5141	gcgtccgtgagcactgttcaact	113042	-	transcription_regulat	transcription co- or, apoptosis	Huntington disease(ハンチントン舞踏病)、 diabetes(糖尿病)、Huntington's chorea(ハンチン トン舞踏症)
13358	L3MBTL2	NM_031488.3	955	caggacgcttcccgtgatgttcc	113130	-	see also 9039 line transcription_regulat	transcription co- repressor	
13359	NAB2	NM_005987.1	1151	agggacacacgcctcttattacg	113153	-	transcription_regulat	-	
13360	PAWR	NM_002583.1	984	gtggttccctagatataaacagg	113162	-	transcription_regulat	-	Parkinson disease(パーキンソン病)
13361	PBXIP1	NM_020524.2	1233	caggcattaaaggcaagagttaga	113169	-	or, apoptosis	-	
13362	PLRG1	NM_002669.1	835	aagggttatcaggcattatcatgg	113210	-	see also 7886 line	-	
13363	RNF12	NM_016120.2	491	atggtgactctataatagactgg	113237	-	see also 1745 line	-	
13364	RYBP	NM_012234.3	676	tgggcaacgtcacccgtcattatc	113295	-	see also 6674 line transcription_regulat	-	
13365	SAP18	NM_005870.3	355	aagacctggctatcgagtttaagg	113302	-	or	-	
13366	SAP30	NM_003864.1	552	gagcgaagggcatotttaccat	113306	-	see also 4085 line transcription_regulat	-	
13367	SIH2	NM_005067.4	898	acggccacaagagcattaccacc	113319	-	or	-	
13368	SUFU	NM_016169.2	1314	ctgcatggacggcactttacata	113338	-	see also 3535 line transcription_regulat	-	
13369	TTRAP	NM_016614.2	726	ctgcggacgaatgaatcagttta	113365	-	transcription_regulat	-	
13370	TZFP	NM_014383.1	283	cggccagcactctgtgatctct	113381	-	see also 6951 line transcription_regulat	-	
13371	YAF2	NM_005748.2	418	aagtcacggcctgcatctatgtgc	113391	-	transcription_regulat	transcription co- repressor	
13372	ZFPM2	NM_012082.2	2112	cagccggcagcaaacatcatatgg	113432	-	or	-	
13373	NMI	NM_004688.1	554	gtgagctcgaaagttccttatga	113479	-	see also 5112 line transcription_regulat	transcription cofactor	

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13374	PCAF	NM_003884.3	1785	gggatatccgatggaataat	113527	-	transcription_regulat or, cell_cycle	-	-
13375	PIR	NM_003882.1	232	tgaggctctocaaagaaagttaact	113563	-	transcription_regulat or	transcription cofactor	-
13376	HDAC11	NM_024827.1	244	gtgcacacagggcgctatcttaa	113581	-	transcription_regulat or	-	-
13377	HDAC3	NM_003883.2	359	gagttctgctcgcgttacacagg	113605	-	see also 2640 line	-	-
13378	HDAC4	NM_006037.2	1448	gcggagtgctgacctctataac	113639	-	transcription_regulat or, cell_cycle	transcriptional repressor	-
13379	HDAC5	NM_005474.3	1219	tgaggcgctgctcgtgtgaaca	113651	-	see also 3811 line	-	-
13380	HDAC7A	NM_015401.1	2038	tggaacacgggatgtttgtgatg	113669	-	transcription_regulat or, cell_cycle	-	-
13381	HDAC8	NM_018486.1	82	ctggtccoggtttatctatag	113684	-	transcription_regulat or	-	-
13382	HDAC9	NM_014707.1	266	ctgtgtcgtgagaagcaattg	113719	-	see also 5898 line	-	-
13383	MYBBP1A	NM_014520.1	93	ccgaacgctatggcctattgaag	113783	-	transcription_regulat or	-	-
13384	NFKBIA	NM_020529.1	1026	gaggccagcgtctgaacttatga	113819	-	transcription_regulat or, apoptosis	Transcription factor p65	diabetes mellitus(糖尿病)、diabetes(糖尿病)
13385	RNF19	NM_015435.3	1621	tagtatcgggttccctattatg	113855	-	see also 6415 line	-	-
13386	VHL	NM_000551.2	756	caggctcgtctacgaagatctgg	113899	-	transcription_regulat or, apoptosis, cell_cycle	transcription factor binding	benign familial polycythemia(良性家族性赤血球 増加症)、Von Hippel-Lindau disease(ヒッペル・リ ンドウ病(網膜小脳血管腫症))、renal cell carcinoma(腎細胞癌)、von Hippel-Lindau syndrome(フォンヒッペル・リンダウ症候群)、CNS Tumours(中枢神経腫瘍)、 phaeochromocytoma(褐色細胞腫)、 pheochromocytoma(褐色細胞腫)、squamous cell cancer(扁平上皮癌)、familial nervous system
13387	GSN	NM_000177.3	740	cagcaatcgggtatgaagactga	113910	-	see also 151 line	-	-
13388	CAPG	NM_001747.1	864	ttgcccttgaaactgctgatct	113928	-	-	barbed-end actin capping	-
13389	CAPPA3	NM_033328.2	196	gagtaattcgcagactgttatta	113934	-	see also 9406 line	-	-
13390	CAPZA1	NM_006135.1	101	atgacgttggtactactactaat	113977	-	-	structural constituent of cytoskeleton	-
13391	CAPZA2	NM_006136.1	766	atgtcggacactacttctaaagc	114012	-	-	structural constituent of cytoskeleton	-
13392	CAPZB	NM_004930.1	482	gcggtcgcaccgccattacaag	114028	-	see also 3429 line	-	-
13393	EVL	NM_016337.1	323	caggctcagggcttaaacatttgc	114039	-	signal_transduction	-	-
13394	HRHFB21	NM_007032.3	508	aagaccgtacgtccaacttcagc	114050	-	see also 4921 line	-	-
13395	ARP3BET	NM_020445.1	261	gtggccgatacgcacatggaatca	114060	-	-	-	-

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13396	FLNA	NM_001456.1	3814	tggcagcagcaccattaccctaca	114088	-	signal_transduction & kinase_related see also 7853 line	actin cross-linking	-
13397	FSON3	NM_020369.1	1456	cagcccgagccgagcattcattact	114129	-			
13398	MACF1	NM_012090.3	9962	gagatcaatgctcgtgaggaatac	114333	-			
13399	PLS1	NM_002670.1	1874	aagatcgggtgcccgggatatgac	114666	-		structural constituent of cytoskeleton	-
13400	SPTA1	NM_003126.1	3411	acgtcgtctattgcaacgttata	114739	-	see also 2099 line		
13401	AVIL	NM_006576.2	710	tggccgagcgtccattatcaaacg	114835	-		structural constituent of cytoskeleton	-
13402	CFL1	NM_005507.1	288	ctgcccgtctgcccctctatgatg	114862	-	signal_transduction	actin modulating	-
13403	ACTN4	NM_004924.3	886	ctgcccgaacccgggactctgtaag	114874	-	see also 3427 line		
13404	EPB49	NM_001978.1	756	cagccggctgcctgggaatcatct	114884	-		structural constituent of cytoskeleton	-
13405	FSON1	NM_003088.1	1153	agggcgtccaaatggcaagtttgt	114998	-		actin bundling	-
13406	FSON2	NM_012418.1	1122	ctgccaacaccattgttgagatg	114907	-		actin bundling	-
13407	VIL1	NM_007127.1	864	caagtcaaggagactgttatactcc	114916	-	see also 4958 line		
13408	DSTN	NM_006870.2	523	aagttaggtggatccttaattgt	114939	-		actin filament severing	-
13409	WASF1	NM_003931.1	457	gtgtgaccgtttatctgttgt	114948	-	see also 2692 line		
13410	WASF3	NM_006646.3	906	caggagttacaggattactcttacc	114992	-		actin polymerizing	-
13411	ABLIM1	NM_002313.4	1194	tggctcaccagggtcactatctct	115041	-	see also 1485 line		
13412	ABLIM2	NM_032432.2	999	gggtctccggagccgtgtgttata	115085	-			
13413	ACTN1	NM_001102.2	2638	gagacagccgacacagatacagc	115107	-		structural constituent of cytoskeleton	-
13414	ACTN2	NM_001103.1	2023	tcgtgccatcccggtatcaatcc	115135	-		structural constituent of muscle	-
13415	ACTN3	NM_001104.1	2151	gagccgtggtgttcgacaataagc	115151	-		structural constituent of muscle	-
13416	ADD1	NM_001119.3	255	aggtacttcgacccgagtagatga	115154	-	see also 707 line		
13417	ADD2	NM_001617.1	508	ccgacggggcagcccttactttga	115196	-			
13418	ARPC1A	NM_006409.2	762	ctgggtccacccgggtgaagcttct	115310	-	see also 4495 line		
13419	BCL7B	NM_001707.2	232	gtgacagtcctccgtgaggatattt	115323	-			
13420	BPA1	NM_001723.3	1239	aagtcgtgcgactaatgaactta	115366	-	see also 1145 line		
13421	C6orf209	NM_018368.2	1542	ctgttaccgccggacataccctattc	116063	-			
13422	C9orf40	NM_017998.1	768	ctgacagacattgaagatttaag	116068	-			
13423	CALD1	NM_004342.4	587	gagttcgaccacaacaataacaga	116074	-			
13424	CEACAM1	NM_001712.2	1306	ctgaacgtaaactataatgtctct	116110	-		USF43/USF44 complex	-

Alzheimer disease(アルツハイマー病)

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13425	CEACAM5	NM_004363.1	2093	tggctactgacgcgaataattcc	116131	-	-	USF43/USF44 complex	-
13426	CFL2	NM_021914.5	321	gtgagtgacattgggtactgt	116140	-	see also 8196 line	-	-
13427	CGN	NM_020770.1	3702	acgattccctgtccattgcatca	116178	-	-	-	-
13428	CLMN	NM_024734.2	1068	ggagcgtaccatacattgttaac	116202	-	-	-	-
13429	CNN1	NM_001299.3	293	ccgtcgcacggcgaacacttca	116243	-	-	calmodulin binding	-
13430	CNN2	NM_004368.1	30	gagctccacgcagttcaacaagg	116251	-	-	calmodulin binding	-
13431	CNN3	NM_001839.1	1049	taggaccaaagcattgattatt	116279	-	-	troponin G binding	-
13432	CORO1A	NM_007074.1	967	cagctcaatccgttactttgaga	116285	-	-	structural molecule	-
13433	CORO1B	NM_020441.1	517	ctgogacaacgtgtactcatot	116287	-	-	-	-
13434	CORO1C	NM_014325.2	294	tgtcgaattgacaaatttacc	116297	-	see also 5620 line	-	-
13435	CORO2A	NM_003389.2	555	gagatgcctctctgtctgaaga	116328	-	-	-	-
13436	CORO2B	NM_006091.1	1266	tttgtgtcaacggaatagattta	116351	-	-	membrane associated actin binding	-
13437	COTL1	NM_021149.2	450	gtgaaggagggtctacagaattt	116357	-	-	-	-
13438	DAAM1	NM_014992.1	2415	atgagccgaatttaoactatca	116416	-	-	-	-
13439	DAAM2	NM_015345.2	522	gagctgtacgcgtttgatgagg	116443	-	-	-	-
13440	DBN1	NM_004395.2	1926	gggggtacttctcgtcaatcaca	116491	-	-	-	-
13441	DIAPH1	NM_005219.2	885	cagccgctgtcgtgatgattaaa	116504	-	-	receptor binding	Konigsmark syndrome(ケーンシホルマルク症候群)、deafness(型)
13442	DIAPH2	NM_006729.2	2625	aagatactaacgaatttagaga	116629	-	see also 4745 line	-	-
13443	DMD	NM_000109.2	9776	ttgttgaccactattatgacc	116884	-	see also 70 line	-	-
13444	DNASE1	NM_005223.2	1341	gggaagggaacagctataaggagc	116921	-	apoptosis	deoxyribonuclease	systemic lupus erythematosus(全身性エリテマトース)、arthritis(関節炎)
13445	ENC1	NM_003633.1	1025	ttgttaagagcttgcgaattaac	116939	-	see also 2451 line	-	-
13446	EPB41	NM_004437.1	938	gggataacgcaacctotaagaca	116969	-	-	-	hereditary elliptocytosis(遺伝性楕円赤血球症)
13447	EPB41L1	NM_012156.2	1265	aggtctgcacatcagcatcatca	117022	-	see also 5152 line	-	-
13448	EPB41L2	NM_001431.1	1503	gtgtgagtggaagcatcatcttt	117062	-	see also 1000 line	-	-
13449	EPB41L3	NM_012307.2	1057	gggaaccggtcgcgaataaacaga	117121	-	see also 5269 line	-	-
13450	FHOD1	NM_013241.1	3413	gcggcaaccgcaagctctttgaga	117185	-	-	actin binding	-
13451	FLI1	NM_002018.2	2388	ctgttgctccgcagctgttcatct	117202	-	-	actin binding	-
13452	FLNB	NM_001457.1	6866	tgggtctgctgggtgtatttata	117329	-	signal_transduction	-	Alzheimer disease(アルツハイマー病)
13453	FMNL1	NM_005892.3	896	gtgctacgcggccatcatgaact	117345	-	-	-	-
13454	FXYD5	NM_014164.3	216	aagatacacagtcctcagttctca	117367	-	channel	ion channel	-
13455	GC	NM_000583.2	1127	atgtagagttgcccaacaacaaa	117393	-	-	vitamin D binding	diabetes mellitus(糖尿病)、diabetes(糖尿病)
13456	GMFB	NM_004124.2	288	acgacaacctcgtcttatttgt	117414	-	-	protein kinase inhibitor	-
13457	GMFG	NM_004877.1	286	gggctgcaagccgggaacaacaga	117426	-	kinase related	protein kinase inhibitor	-
13458	HDAC6	NM_006044.2	2403	cagtgccgcattatccttatcc	117467	-	transcription_regulation, cell cycle	transcriptional repressor	-
13459	HIP1	NM_005338.4	948	cagccctgtcaggaacatcagc	117493	-	see also 3727 line	-	-
13460	IPP	NM_005897.1	1764	atgatcaccagtcgttgaagg	117512	-	-	actin binding	-

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13461	IQGAP2	NM_006633.1	4237	atggtgagcgcgtgcaatg.ctaga	117641	-	signal transduction	calmodulin binding	-
13462	KIAA0843	NM_014945.1	1057	ctggcgtctaaagtggataatgaga	117689	-	see also 6134 line		
13463	KLHL1	NM_020866.1	2614	ctgttcocgctactggattatg	117729	-	see also 8009 line		
13464	KLHL2	NM_007246.2	1910	ttggcgcgtcagtagaattataaa	117793	-	see also 5045 line		
13465	KLHL3	NM_017415.1	1641	aagagcgttgaggttaacatgc	117821	-	-	structural molecule	-
13466	KLHL4	NM_019117.3	1727	aggagacagtgaggattacgtag	117859	-	see also 7711 line		
13467	KPTN	NM_007059.1	275	ttgtctccatcgacacttcaac	117888	-	see also 4942 line		
13468	LCP1	NM_002298.2	1798	aggacccgaagattagtaacagt	117932	-	see also 1474 line		
13469	LSP1	NM_002339.1	1076	ccgggcagtggaagtatgagaag	117941	-	signal transduction	signal transducer	-
13470	MEFV	NM_000243.1	1680	tggaccactctcctaagagataaa	117950	-	-	zinc binding	Mediterranean fever(地中海熱)
13471	MGC35136	NM_152427.1	613	ctggcgcgtacgccccttatgacg	117987	-	-	-	-
13472	MTSS1	NM_014751.2	752	tcgagcgcgttaattgattgtct	117973	-	cell_cycle、 signal_transduction 、kinase_related		
13473	MYBPC1	NM_002465.1	501	cagatgcgaggtcacctataagg	118011	-	see also 1581 line		
13474	MYBPC2	NM_004533.1	1266	ggggctcgctatcaggtcataaaco	118108	-	-	structural constituent of muscle	-
13475	MYBPC3	NM_000256.2	3163	aggtgacgggtcgccattgagaac	118140	-	-	structural constituent of muscle	cardiomyopathy(アルコール性心筋症)
13476	MYRIP	NM_015460.1	1799	cagggtcgagatgattttatcaga	118165	-	-	-	-
13477	NCALD	NM_032041.1	449	tggcgggaatggcttatatcagc	118188	-	see also 9066 line		
13478	NEB	NM_004543.2	16552	ttgccgactctccgatcaataagg	118516	-	-	structural constituent of muscle	nemaline myopathy(ネマリンミオパシー)
13479	NEBL	NM_006393.1	2571	gagctaccactttaagttaact	118673	-	-	structural constituent of muscle	-
13480	PARVA	NM_018222.2	687	cagttattccgcgcaccaattcg	118695	-	-	actin binding	-
13481	PARVB	NM_013327.2	513	gtggagcgtggagctcaattcagc	118707	-	-	actin binding	-
13482	PARVG	NM_022141.3	988	aaggacgtcttttgatgaattatt	118719	-	-	actin binding	-
13483	PIP	NM_002652.1	272	aaggtgaatttaactataagat	118754	-	-	actin binding	-
13484	PLEC1	NM_000445.1	12442	ctgatggagcgttgatcacatga	118795	-	-	structural constituent of muscle	muscular dystrophy(筋ジストロフィ)
13485	PLS3	NM_005032.3	1034	aaggtgaaccacggatagatt	118814	-	see also 3513 line		
13486	RDX	NM_002906.2	1697	aagcagcgcgtgataagatacag	118872	-	-	structural constituent of cytoskeleton	-
13487	SCIN	NM_033128.1	1597	aggacaccaattgcatcataaa	118898	-	-	structural constituent of cytoskeleton	-
13488	SEC24C	NM_004922.2	2636	gcgtcggtctccgcataatc	118941	-	see also 3422 line		

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13489	SMTN	NM_006932.3	513	ttgcgaagcgcctgtgagatga	118957	-	-	-	-
13490	SNTA1	NM_003098.2	781	aggacgtctacacgtatttcaag	118973	-	-	-	-
13491	SNTB1	NM_021021.2	1648	ccgtttgaacacacattatgaga	118991	-	-	-	-
13492	SNTB2	NM_006750.2	1568	ttgtccgaagcccgattgtatttg	119026	-	see also 4765 line	-	-
13493	SNTG1	NM_018967.1	747	cagtaggagatttgattgaagc	119035	-	see also 7613 line	-	-
13494	SNTG2	NM_018968.1	498	caggtaattggcaccatcatgtaga	119075	-	-	-	-
13495	SORBS1	NM_006434.1	1896	tagctatataccacacagaatgatg	119110	-	signal transduction	-	-
13496	SPTAN1	NM_003127.1	4914	ccggatccgtggggatttcgaca	119200	-	-	structural constituent of cytoskeleton	-
13497	SPTB	NM_000347.3	5791	tagtgacacaggcggataattc	119253	-	see also 289 line	-	-
13498	SPTBN1	NM_003128.1	2622	acgtggccacagatgatttcc	119289	-	see also 2101 line	-	-
13499	SPTBN2	NM_006946.1	6918	gggcagcgcgccttggattacc	119394	-	-	structural constituent of cytoskeleton	-
13500	SPTBN4	NM_025213.1	1665	cagccgaaggcctactacgatatc	380328	-	-	structural constituent of cytoskeleton	-
13501	SPTBN5	NM_016642.1	1022	cagatgagcgcctctatcatgacc	119400	-	see also 2155 line	-	-
13502	SVL	NM_003174.2	829	gagcccgactccgagattattatc	119433	-	-	actin binding	atherosclerosis(粥状硬化症)
13503	TAGLN	NM_003186.2	654	cggacagactcggcagatcatca	119495	-	see also 4379 line	-	-
13504	TLN1	NM_006289.2	1265	ttgccgctacatcagatcatc	119505	-	-	-	-
13505	TLN2	NM_015059.1	3140	gtgtccgatggaaatcgattca	119604	-	-	-	-
13506	TMOD1	NM_003275.1	35	atgtctgacagacgagaaactaga	119653	-	-	tropomyosin	-
13507	TMOD2	NM_014548.2	364	ccgagagacacctctcatgtacc	119679	-	see also 5750 line	-	-
13508	TMOD3	NM_014547.3	1243	gtgcgtaagagacgagttgaagg	119719	-	-	-	-
13509	TMOD4	NM_013353.1	1055	caggccatgaccccgaaacaatga	119731	-	see also 5406 line	-	-
13510	TMSNB	NM_021992.1	209	gagaaagagtggtttcaaacatc	119736	-	-	molecular_function unknown	-
13511	TNNI1	NM_003281.2	378	tggacctccgtgggaagtccaag	119737	-	-	tropomyosin	-
13512	TNNI3	NM_000363.3	487	ttgaccttgaggcaagtttaag	119744	-	-	actin binding	hypertrophic cardiomyopathy(肥大型心筋症)
13513	TPM1	NM_000366.4	962	tggaccacgcctctcaacgatatg	119759	-	-	structural constituent of muscle	cardiomyopathy(アロコール性心筋症)
13514	UTRN	NM_007124.1	2680	gaggatcgtcaacaacatcataga	119821	-	-	structural molecule	-
13515	VASP	NM_003370.1	451	tcgtccggggtgtcaagataaac	120006	-	-	actin binding	-
13516	VCL	NM_003373.2	2028	ctgcggttggtactgctaataaa	120050	-	-	-	-
13517	VILL	NM_015873.1	569	gaggataaataogattcatgtaa	120086	-	-	structural constituent of cytoskeleton	-



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[illegible]

図 46 (続き)

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13554	ADD3	NM_016824.1	1729	gaggacaatgaacgtaaac	121234	-	see also 6969 line		
13555	AKAP5	NM_004857.2	2025	aagcaagccacttgaacttca	121257	-	kinase related、 signal transduction	protein transporter	-
13556	GAP43	NM_002045.2	504	cagaagtgccactaaagcttcc	121274	-	kinase related	calmodulin binding	-
13557	IQGAP1	NM_003870.2	2335	tcgctgccgtggatacttagtc	121324	-	see also 2627 line		
13558	ITPKA	NM_002220.1	804	atggcgctcaggacttaactaga	121392	-	kinase related、 signal transduction	calmodulin binding	-
13559	ITPKB	NM_002221.2	916	gggctgttggagagctagctaac	121405	-	kinase related、 signal transduction	calmodulin binding	-
13560	KCNH1	NM_002238.2	237	cgggcggtccaatgataactaatt	121423	-	channel、 signal transduction		-
13561	KCNH5	NM_139318.3	1240	gggactccatatactgatacaatc	121537	-	see also 9688 line		
13562	KCNN1	NM_002248.3	1695	ccgtcatgtacgaccttgatcgc	121578	-	channel		-
13563	KCNN2	NM_021614.2	1497	gagcgatgtggttgatgaata	121600	-	channel		-
13564	KCNN3	NM_002249.3	1791	caggacgtaactagtaactttct	121624	-	see also 1447 line		
13565	KCNN4	NM_002250.2	936	cagcatcgccgctctcaatcaag	121639	-	channel	small conductance calcium-activated potassium channel	-
13566	NOS1	NM_000620.1	4910	gtgaccaacccttagatctga	121822	-	see also 417 line		
13567	NOS2A	NM_000625.3	1502	aggctgtcgttgagatcaacatt	121838	-	see also 419 line		
13568	NRGN	NM_006176.1	267	aagcggagacgacgacattctga	121853	-	signal transduction	calmodulin binding	-
13569	PDE1A	NM_005019.2	338	atgttaagctcgtgacttaaaag	121861	-	signal transduction	calmodulin- dependent cyclic- nucleotide phosphodiesterase	-
13570	PDE1B	NM_000924.2	362	ctgctggaagccgtctacataga	121900	-	apoptosis、 signal transduction	calmodulin- dependent cyclic- nucleotide phosphodiesterase	-
13571	PHKA1	NM_002637.1	2904	atgttcgacttcgaattggtct	121967	-	see also 1708 line		
13572	PHKA2	NM_000292.1	1513	cagagtatcgccgacattcctcc	122026	-	see also 257 line		
13573	PHKB	NM_000293.1	730	tcgagctcgttggtttgacaaa	122102	-	see also 261 line		
13574	PPP3CA	NM_000944.2	1826	aaggcgcttagacogaattaatga	122224	-	phosphatase	protein phosphatase type	-
13575	PPP3CB	NM_021132.1	1563	aagggtttggatagatcaatga	122268	-	phosphatase、 signal transduction 、 cell cycle、 transcription_regulat or	protein phosphatase type 2C	-
13576	PPP3CC	NM_005605.3	1070	ctgtcgaagggtgctcttatttc	122286	-	phosphatase	protein phosphatase type	schizophrenia(精神分裂病)
13577	RGS1	NM_002922.2	231	aagtaatgcaatggtctcaatct	122316	-	signal transduction 、 gpcr	calmodulin binding	-

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13578	RGS16	NM_002928.2	270	aagttcgagtgaggcagtaaac	12328	-	signal_transduction 、gpcr	calmodulin binding	-
13579	RGS2	NM_002923.1	291	ctgctagccagcaaatatgtct	12336	-	cell_cycle、 signal_transduction 、gpcr	calmodulin binding	-
13580	RGS4	NM_005613.3	345	cagcttcaaaagctttctgaag	12347	-	signal_transduction 、gpcr	calmodulin binding	-
13581	RYR2	NM_001035.1	12854	ctgttgcgcaggtacaatat	122643	-	see also 634 line		
13582	SLOC8A1	NM_021097.1	90	atgcggcattaaagctttcoacc	12217	-	see also 8084 line		
13583	STRN	NM_003162.1	1778	atggcactctgcgtttatggaat	122862	-	see also 2135 line		
13584	STRN3	NM_014574.2	1182	atggcctgaaccaataacgttcc	122909	-	see also 5757 line		
13585	STRN4	NM_013403.1	1836	tggcgacacccgtttgtatgaca	122975	-	see also 5431 line		
13586	IL18R1	NM_003855.2	789	tggatcggatcctctaataacatg	122997	-	receptor_activity、 signal_transduction	-	-
13587	IL18RAP	NM_003853.2	948	gtgagtattccgcacacataaag	123032	-	receptor_activity、 signal_transduction	-	-
13588	IL1R1	NM_000877.2	1229	aagacctatgacgcataataact	123118	-	receptor_activity、 signal_transduction	interleukin-1、 Type I, activating receptor	diabetes(糖尿病)
13589	IL1RAP	NM_002182.2	715	gtgtcaaacccgactatcacctgg	123159	-	see also 1392 line		
13590	IL1RAPL1	NM_014271.2	767	gagagcctgttcgaatacaaatgt	123208	-	receptor_activity、 signal_transduction	-	mental retardation(精神遅滞)
13591	IL1RAPL2	NM_017416.1	1727	ctgacctggcgaattatcacctgc	123300	-	see also 6987 line		
13592	IL1RL1	NM_003856.2	1167	aggcacaccgtaagactaagtag	123369	-	receptor_activity、 signal_transduction	-	-
13593	IL1RL2	NM_003854.2	1270	ctgtatgacgcctatgtcttata	123454	-	receptor_activity	-	-
13594	MYD88	NM_002468.2	789	gcgactgatcccccatcaagtaca	123479	-	receptor_activity、 signal_transduction 、kinase_related	interleukin-1、 Type I, activating receptor	atherosclerosis(粥状硬化症)
13595	SIIRR	NM_021805.1	485	gtgaccacagcactgaagtctatgg	123480	-	-	-	-
13596	TLR1	NM_003263.2	1078	tggcacaacaactgtatgtatt	123518	-	see also 2214 line		
13597	TLR10	NM_030956.1	2378	atgtccgattccacgcatttatt	123611	-	receptor_activity	interleukin-1、 Type I, activating receptor	-
13598	TLR2	NM_003264.2	1570	ttgaatttgcgcgaactcaaaaga	123668	-	receptor_activity、 signal_transduction	interleukin-1、 Type I, activating receptor	rheumatoid arthritis(関節リウマチ)
13599	TLR6	NM_006068.2	563	ttgctcaactgcatctaagtat	123702	-	receptor_activity、 kinase_related	lipoprotein binding	-
13600	IL1R2	NM_004633.3	235	gcgctgtacgtgttggaatgg	123743	-	receptor_activity	-	-

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13601	IL2RA	NM_000417.1	336	aagcgggtcactctatctct	123773	-	receptor_activity、 apoptosis、 cell_cycle、 signal_transduction	Rel A homodimer	-
13602	IL2RB	NM_000878.2	561	gagaccacacagatcaacataag	123792	-	receptor_activity、 signal_transduction	interleukin-2 receptor	rheumatoid arthritis(関節リウマチ) rheumatoid arthritis(関節リウマチ)、 agammaglobulinemia(無γ-グロブリン血症)、 thymic epithelial hypoplasia(胸腺上皮細胞形成 不全症)、immunodeficiency(免疫不全症)、 severe combined immunodeficiency disease(重 度)
13603	IL2RG	NM_000206.1	75	gtggggctgacacgacaattct	123809	-	receptor_activity、 signal_transduction	interleukin-7 receptor	
13604	IL10RA	NM_001558.2	697	ctgtcgtctccgaagtaacaag	123845	-	receptor_activity	interleukin-10 receptor	-
13605	IL10RB	NM_000628.3	552	atggacttataatgtgaatact	123870	-	receptor_activity、 signal_transduction	interleukin-10 receptor	-
13606	IL8RA	NM_000634.2	566	gcgtcaacttggtcaagttgttt	123887	-	receptor_activity、 gpcr、 signal_transduction	interleukin-8 receptor	-
13607	IL8RB	NM_001557.2	461	aagatcttagtaattacagttac	123901	-	receptor_activity	interleukin-8 receptor	-
13608	IL6R	NM_000565.2	1210	gggctgaacggctcaagacattc	123958	-	receptor_activity、 signal_transduction	-	-
13609	IL6ST	NM_002184.2	1682	cogtgcattcaccatttaaga	124022	-	see also 1395 line	-	-
13610	CSF2RB	NM_000395.1	2554	gggagccggctcctgagatcaaga	124073	-	receptor_activity、 signal_transduction	interleukin-5 receptor	pulmonary alveolar proteinosis(肺胞蛋白症)
13611	IL5RA	NM_000564.2	1588	gtggagcccaacctattatgtgg	124102	-	receptor_activity、 signal_transduction	-	-
13612	IL4R	NM_000418.1	991	ccgcctcgtggctataataatcc	124120	-	receptor_activity、 signal_transduction	receptor signaling protein	diabetes(糖尿病)
13613	IL3RA	NM_002183.2	481	cagaaatgtgacogatatcaggt	124129	-	receptor_activity	-	-
13614	IL9R	NM_002186.2	883	tggtagagaggagagcgttataca	124151	-	receptor_activity、 signal_transduction	-	-
13615	IL21R	NM_021798.2	771	gagtgaccggcgtcatttcaga	124158	-	receptor_activity	-	-
13616	IL17R	NM_014339.3	506	ttgtgcgtcaggttgagtttct	124167	-	receptor_activity、 signal_transduction	interleukin-17 receptor	-
13617	IL12RB2	NM_001559.2	1859	ctgcccactgatttaacataat	124208	-	receptor_activity、 signal_transduction	interleukin receptor	-
13618	IL13RA2	NM_000640.2	142	tggctatcggtgcttatatacc	124230	-	high molecular weight B-cell growth factor receptor ligand	-	-
13619	IL15RA	NM_002189.2	245	gagcgggtacatttgtaactctgg	124283	-	receptor_activity、 signal_transduction	-	-
13620	IL17RB	NM_018725.2	958	tggtagcagggtatctctaatg	124321	-	see also 7582 line	-	-

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13621	IL18BP	NM_005699.2	1038	ctgcactgcctcagttagaagc	124335	-	-	-	-	-	-	-
13622	CCR5	NM_000579.1	1352	ccagcgcagcaagctcagtttac	124350	-	receptor_activity, gpcr, signal_transduction	coreceptor	resistance to or association with human immunodeficiency virus(HIV関連、HIV抵抗性)			
13623	CCR6	NM_004367.3	1346	cagtgagaccgagataacagaca	124376	-	receptor_activity, gpcr, signal_transduction	-	-	-	-	-
13624	CCR8	NM_005201.2	1158	ccgttcctccagcgtagactaca	124398	-	receptor_activity, gpcr, signal_transduction	coreceptor	-	-	-	-
13625	CCR9	NM_006641.2	150	tggagactactgtaactcaac	124402	-	see also 4895 line	-	-	-	-	-
13626	CCR11	NM_016557.2	732	gggtgtgctactttatcacagc	124443	-	receptor_activity, gpcr, signal_transduction	-	-	-	-	-
13627	GPR2	NM_016602.1	568	acgaagctgtgcgcctcatcttc	124454	-	receptor_activity, gpcr, signal_transduction	C-C chemokine receptor	Peutz-Jeghers syndrome(ポイツ・イエガー症候群)			
13628	CXCR3	NM_001504.1	613	tcgcctccagacttccttc	124460	-	receptor_activity, gpcr, signal_transduction	C-X-C chemokine receptor	-	-	-	-
13629	CCBP2	NM_001296.3	948	gtgctatggtccatacaatct	124473	-	receptor_activity, gpcr, signal_transduction	C-C chemokine receptor	-	-	-	-
13630	CCL13	NM_005408.2	350	aagtcacacocctgaagacttga	124478	-	receptor_activity, gpcr, signal_transduction	chemokine receptor	-	-	-	-
13631	CCR1	NM_001295.1	816	tggacccctacaaattgactat	124499	-	receptor_activity, gpcr	C-C chemokine receptor	-	-	-	-
13632	CCR2	NM_000647.3	264	ctggctgctcatcttaataaa	124510	-	receptor_activity, gpcr, signal_transduction	-	rheumatoid arthritis(関節リウマチ)、 atherosclerosis(粥状硬化症)			
13633	CCR3	NM_001837.2	995	cagaggatacagtatatagctgg	124526	-	receptor_activity, gpcr, signal_transduction	-	-	-	-	-
13634	CCR4	NM_005508.2	54	atgaacccacaggatagcaga	124534	-	see also 3848 line	-	-	-	-	-
13635	CCR7	NM_001838.2	296	tggctgtgtgacctatctat	124556	-	receptor_activity, gpcr, signal_transduction	C-C chemokine receptor	Peutz-Jeghers syndrome(ポイツ・イエガー症候群)			
13636	CMKLR1	NM_004072.1	960	cagcgttcgcctggcttacatgg	124569	-	receptor_activity, gpcr, signal_transduction	chemokine receptor	-	-	-	-
13637	CX3CR1	NM_001337.2	916	gtgactgagacggtgcatcttag	124587	-	receptor_activity, gpcr, signal_transduction	coreceptor	atherosclerosis(粥状硬化症)			

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13638	CXCR4	NM_003467.1	90	tggaggagatcagtatatacaact	124591	-	-	coreceptor	Peutz-Jeghers syndrome(ポイツ・イエガー症候群)、WHIM syndrome(WHIM症候群)
13639	GPR17	NM_005291.1	184	caggctgatcaccaacttctcc	124608	-	receptor_activity、 gpcr、 signal_transduction	purinergic nucleotide receptor、G- protein coupled	-
13640	XCR1	NM_005283.1	663	ccgcacggtcaagctcatcttcg	124610	-	receptor_activity、 gpcr	chemokine receptor	-
13641	IFNGR1	NM_000416.1	1463	gagtccttgattggttagaacc	124655	-	receptor_activity、 signal_transduction	interferon-gamma receptor	atypical mycobacteriosis(AM症)
13642	IFNGR2	NM_005534.1	953	cagcaggcttcccaatggatttc	124659	-	receptor_activity、 signal_transduction	interferon-gamma receptor	atypical mycobacteriosis(AM症)
13643	IFNAR1	NM_000629.1	418	tggtatgaggttgactactttac	124684	-	receptor_activity、 signal_transduction	interferon- alpha/beta	-
13644	IFNAR2	NM_000874.2	667	gcggagaacacacgttgttcagt	124739	-	receptor_activity、 signal_transduction	interferon- alpha/beta receptor ligand	-
13645	IL22RA1	NM_021258.2	1496	aaggacacacacagtagctaaag	124778	-	receptor_activity	-	-
13646	CRIM1	NM_016441.1	1491	tggttcaaacgcatcacaatg	124798	-	receptor_activity	-	-
13647	CTGF	NM_001901.1	971	atgaagacataccagagctaaatt	124855	-	-	insulin-like growth factor binding	-
13648	CYR61	NM_001554.3	690	gggtctgtgacgagtagatgatac	124867	-	-	insulin-like growth factor binding	-
13649	ESM1	NM_007036.2	309	ctgaggtgtcagccttctaattg	124881	-	-	insulin-like growth factor binding	-
13650	IGFALS	NM_004970.1	1777	ccgcgtacacactacaacaacatc	124894	-	-	insulin-like growth factor binding	-
13651	IGFBP1	NM_000596.1	850	tgtgtcgtctacccttgggaatgg	124902	-	signal_transduction	Hepatocyte nuclear factor 1	alcoholism(アルコール依存症)
13652	IGFBP3	NM_000598.2	717	tggctccctgcctgtagagaaatgg	124911	-	-	insulin-like growth factor binding	breast cancer(乳癌)
13653	IGFBP4	NM_001552.1	644	agggtagaccacccccacaacacagc	124914	-	signal_transduction	insulin-like growth factor binding	-
13654	IGFBP6	NM_002178.1	385	ctgttcagagagagaatctctaag	124923	-	-	insulin-like growth factor binding	-
13655	IGFBP7	NM_001553.1	759	atgagtgcctatcatccaattcc	124929	-	see also 1059 line	insulin-like growth factor binding	-
13656	NOV	NM_002514.2	380	cggcggtagaggagagataactgt	124930	-	-	insulin-like growth factor binding	-
13657	PRSS11	NM_002775.2	590	ctgcccgtgtgtcatatogatttg	124945	-	see also 1812 line	-	-
13658	WISP1	NM_003882.2	858	tggacatccatacactcataag	124972	-	see also 2639 line	-	-
13659	WISP3	NM_003880.2	858	cagccttgccgacagcaatatt	125002	-	signal_transduction	-	arthritis(関節炎)
13660	FIBP	NM_004214.4	148	ggggaacacgacccttatogaag	125018	-	signal_transduction	amine oxidase (flavin-containing)	-
13661	LTBP1	NM_000627.1	4228	ccgttgaaatccgccttgaatt	125129	-	see also 420 line	-	-

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13662	AVPRIA	NM_000706.3	3175	tggaaggactcgcctaactcttc	125137	-	kinase_related, gpcr, receptor_activity,	vasopressin receptor	-
13663	AVPR1B	NM_000707.2	1404	tggctccgtgtgggacaagaatgc	125144	-	kinase_related, gpcr, receptor_activity,	vasopressin receptor	-
13664	COPB2	NM_004766.1	1858	ctgtcatgcggaggacatttagc	125210	-	see also 3276 line		
13665	GNB2L1	NM_006098.2	392	gcgatttggccataccaagg	125243	-	see also 4244 line		
13666	LIM	NM_006457.1	970	aagaatctgaagccgataataca	125273	-	see also 4529 line		
13667	CDK5RAP 3	NM_025197.2	190	acgatccgcgagaagatcaatgc	125285	-	kinase_related, cell_cycle	-	-
13668	CGI-121	NM_016058.1	590	ttggatgctatcattttagaat	125298	-	kinase_related	-	-
13669	NBEA	NM_015678.2	3778	ccggtagcgtagacttaacttgt	125392	-	kinase_related	-	-
13670	PTPRR	NM_002849.2	1426	gaggtcccaacgtatctcttaca	125587	-	kinase_related, receptor_activity, phosphatase, signal_transduction	-	-
13671	DSR1L1	NM_005822.1	342	cagacgtgtccgtataaacttca	125616	-	see also 4060 line		
13672	MYOZ2	NM_016599.2	811	ctggcagacggctctttaataagg	125643	-	see also 6939 line		
13673	AKAP11	NM_016248.2	2810	gtgtgtcatcacgatatgataatga	125725	-	kinase_related, phosphatase	-	-
13674	LLRB1	NM_006669.2	1431	atgacccatggcgtctaaagatca	125841	-	receptor_activity	-	-
13675	PPP1R16B	NM_015568.2	1781	atgggaacctgggtattattacacg	125857	-	phosphatase, signal_transduction	-	-
13676	NAKAP95	NM_014371.1	1344	aggagtagctactaacaagaac	125874	-	see also 5634 line		
13677	ARIH1	NM_005744.2	1114	tagagtgcaatgactgttaaaag	125900	-	see also 3984 line		
13678	BIRC7	NM_022161.2	438	ttgogtctggcctcctcttatga	125928	-	apoptosis, kinase_related	-	melanoma(メラノーマ)
13679	CASP2	NM_001224.3	137	ctgttttgagcgaattgttaga	125934	-	apoptosis	-	holoprosencephaly(全前脳胞症)
13680	DNMT3L	NM_013369.2	744	acgaagatgacgggtaccaatcc	125965	-	transcription_regulat or	-	-
13681	HDAC10	NM_032019.3	1599	ctgacaacgcgggatatacatt	125981	-	transcription_regulat or	-	-
13682	PREX1	NM_020820.2	1051	atgggacagcgggattaccatagc	125998	-	-	-	-
13683	SERP1NB1	NM_080474.1	167	aggctacacttcaacgaattt	126032	-	-	trypsin inhibitor	-
13684	APBB1	NM_001164.2	119	ctgagccagtcggccattatgc	126065	-	transcription_regulat or, cell_cycle, signal_transduction	-	dementia Alzheimer type(アルツハイマー型痴 呆), Alzheimer disease(アルツハイマー病)
13685	BAIAP1	NM_004742.1	771	ctgggaagtcggcacctatgaagg	126091	-	-	-	-
13686	CTBP1	NM_001328.1	90	gcgtccgacctccgatcatgaac	126148	-	-	protein C-terminus binding	-
13687	DLG4	NM_001365.1	1914	ggagaaccgagcggaattgtgac	126169	-	see also 927 line	-	-
13688	HSPB7	NM_014424.3	946	acggcgtcaccgccatcacagaac	126187	-	-	protein C-terminus binding	-

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	13689	ITGB1BP1	NM_004763.2	214	aagtagcgaatcagctactaaga	126193	-	see also 3274 line	apoptosis, signal_transduction	-	protein C-terminus binding	-
13690	ITGB3BP	NM_014288.3	528	ttgacagctatgaattccttaaa	126218	-	-	transcription_regulat	-	-	-	-
13691	MLLT4	NM_005936.1	215	tcgaaacgctcgcgggaaattt	126222	-	-	signal_transduction	-	-	-	leukemia(白血病)
13692	PRKCAP	NM_012407.1	356	ctgtccctcgtctatctgtcc	126302	-	-	see also 5311 line	-	-	-	-
13693	SNX17	NM_014748.2	896	atgctcagacgggtatcagatatt	126329	-	-	see also 5941 line	-	-	-	-
13694	TOPBP1	NM_007027.2	1047	atgcaagttgcgtaagtgaatca	126366	-	-	see also 4919 line	-	-	-	-
13695	TRIM3	NM_006458.2	2294	ttgtagtaacgacttcataaac	126472	-	-	see also 4530 line	-	-	-	-
13696	ELMO1	NM_014800.8	2074	ctgcgggtggcagatcaaac	126523	-	-	see also 5994 line	-	-	-	-
13697	LRRFIP2	NM_006309.1	1066	ggggacaccagcagcttaataga	126563	-	-	-	-	-	-	-
13698	KRT14	NM_000526.3	521	cagcggcctgctgagatcaaga	126586	-	-	Transcription factor AP-2 alpha	-	-	-	epidermolysis bullosa simplex(單純型表皮水疱 症)
13699	YWHAB	NM_003404.3	769	cagcctacacaccccaattcgtct	126595	-	-	-	-	-	-	-
13700	YWHAG	NM_012479.2	437	ccgtgcgtaccgggagagaagatag	126601	-	-	kinase_related, apoptosis, signal_transduction	-	-	protein kinase C binding	-
13701	YWHAH	NM_003405.2	811	tagctgagctggacacactaac	126606	-	-	-	-	-	protein kinase C inhibitor	-
13702	FCGR1A	NM_000566.2	524	tgggaaagcatcgtctacacatca	126616	-	-	receptor_activity, signal_transduction	-	-	hematopoietic- associated factor 1A complex	familial deficiency of IgG receptor (IgG 受容体1 家族性欠損症)
13703	FCGR2B	NM_004001.2	910	ttggggctgagaaacacacacacc	126629	-	-	receptor_activity, signal_transduction	-	-	transmembrane receptor	-
13704	FCGR3A	NM_000569.4	500	caggcctcgagctacttctatga	126631	-	-	receptor_activity	-	-	receptor	rheumatoid arthritis(関節リウマチ)
13705	FCER1A	NM_002001.2	686	aagctcgcgtgagaaagt.ctgg	126663	-	-	receptor_activity	-	-	receptor signaling protein	atopy(アトピー性皮膚炎)
13706	FCER1G	NM_004106.1	84	gagagcctcagctctgtatatc	126668	-	-	receptor_activity, signal_transduction	-	-	transmembrane receptor	-
13707	FCER2	NM_002002.3	566	gagagggaacgaagcttcagattt	126676	-	-	receptor_activity	-	-	receptor signaling protein	atopy(アトピー性皮膚炎)
13708	LGALS3	NM_002306.1	397	gtgctcgatcgtgataacaat	126681	-	-	-	-	-	galactose binding lectin	breast cancer(乳癌)
13709	MS4A2	NM_000139.2	522	tgggggaacgggaattaccatcc	126706	-	-	receptor_activity, channel, signal_transduction , gpcr	-	-	-	leukemia(白血病)



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13710	CD44	NM_000610.2	233	ctggcgcagatcgatttgaatat	126722	-	receptor activity	hyaluronic acid binding	hepatocellular carcinoma(肝癌)、colorectal cancer(大腸癌)、non-hodgkin lymphoma(非ホジキンリンパ腫)、breast cancer(乳癌)、neuroblastoma(神経芽細胞腫)、Alzheimer disease(アルツハイマー病)、colorectal cancers(結腸直腸癌)、leukemia(白血病)、osteosarcoma(骨髄性骨肉腫)、gastric cancer(胃癌)、skin cancer(皮膚癌)、Hodgkin's disease(ホジキン病)、breast cancer(乳癌)、Ehlers-Danlos syndrome(エーラー・ダンロス症候群)、-
13711	FN1	NM_002026.1	2091	aagtgtctcctgtcgaagtattta	126806	-	receptor activity	-	-
13712	GP6	NM_016363.3	852	tcggggcctgtgatcctaataac	126907	-	receptor activity	-	-
13713	ITGA10	NM_003637.3	1423	tggggctctcgcatttagacatc	126921	-	receptor activity	magnesium binding	-
13714	ITGA11	NM_012211.2	1890	cagcatccacgggcaattggacc	126975	-	see also 5198 line	-	-
13715	ITGA2	NM_002203.2	850	gggcgcagaaagtgtctacgaaagt	127013	-	receptor activity	Proto-oncogene	-
13716	NID2	NM_007361.2	2718	gtccggagtggttatgagtttg	127146	-	signal transduction	C-JUN	-
13717	PCOLCE	NM_002593.2	1151	ttccgtgactcagtcatttatt	127183	-	see also 5092 line	-	-
13718	SERPINH1	NM_001235.2	943	ccggacagggcctctacaactact	127195	-	-	collagen binding	-
13719	A2M	NM_000014.3	1966	ctgcataaatcgtcataatgtct	127241	-	-	serpin	-
13720	CGI-100	NM_016040.2	734	gtgtgtcagcattcaagtta	127288	-	see also 1 line	-	-
13721	CGI-109	NM_181836.3	735	aagccgagcagagagatctaaata	127294	-	see also 6635 line	-	-
13722	HSGP25L2	NM_017510.3	108	aagcgcgcctacttcaatcgc	127300	-	-	-	-
13723	IL1RL1LG	NM_008858.2	278	aagcctcgagaccgaataccagg	127303	-	see also 7016 line	-	-
13724	MGC23911	NM_144676.1	144	tggagctgacgatagactttg	127307	-	receptor activity	-	-
13725	P24B	NM_007364.1	376	aagtcaggcgctttatcagttt	127332	-	signal transduction	-	-
13726	RNP24	NM_006815.2	73	cggctcgggctatttctgttagc	127342	-	-	-	-
13727	TMP21	NM_006827.4	538	gtgataccaaacagagtcacaacac	127358	-	-	protein transporter	-
13728	HPS4	NM_022081.4	1637	atgtgtgtcggccatgatctgg	127376	-	-	protein transporter	-
13729	INHBB	NM_002193.1	1176	aggagcgcgtttccgaaatcatc	127392	-	see also 8266 line	-	-
13730	S100B	NM_006272.1	296	tggccttggccatgggttact	127407	-	-	inhibin	-
13731	IPO7	NM_006391.1	530	cagtcctgttggtcagggaattc	127420	-	kinase related	calcium ion binding	melanoma(メラノーマ)
13732	IPO8	NM_006390.1	2075	ctgtctacggatcattgattttg	127559	-	apoptosis	-	-
13733	KPNB3	NM_002271.3	751	ccgtcagcaggcgttatctgc	127602	-	see also 4478 line	-	-
13734	RANBP2	NM_006267.3	9356	tagggcgggataacttgaatta	127747	-	signal transduction	-	-
13735	RANBP3	NM_003624.1	879	acgcgaacccgcaacgaactattt	127763	-	see also 1466 line	-	-
13736	SNPH	NM_014723.2	1099	ctgccagcaacacctatgagaag	127779	-	see also 4359 line	-	-
13737	PLDN	NM_012388.2	292	ggggagccgagcgccgtgttaag	127780	-	signal transduction	-	-
13738	STXBP2	NM_006949.1	890	tggagcttgcgcacatcatatc	127800	-	-	syntaxin-1 binding	-
13739	SNAPAP	NM_012437.3	287	gcgcgggtgtgtgttgaaca	127817	-	-	syntaxin-3 binding	-
13740	NARF	NM_012336.2	854	gcgcgtactgcgtgttaacatca	127836	-	see also 5297 line	-	-

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13741	TMPO	NM_003276.1	1559	ctggtccgaactgatgtctct	127871	-	-	lamin/chromatin binding	-
13742	NLGN2	NM_020795.2	639	tggaggagaccggaacatgttc	127884	-	-	-	-
13743	TNFRSF10A	NM_003844.2	325	gggtccacaagaccctcaagttt	127894	-	-	receptor activity, apoptosis, signal_transduction, kinase related	-
13744	TNFRSF10B	NM_003842.3	1299	gagacagtgcttcgatgactttg	127916	-	-	receptor activity, signal_transduction, apoptosis, kinase related	head and neck cancer(頭頸部癌)
13745	DCTN6	NM_006571.2	237	tggcgaagggaacctaataaag	127919	-	-	enzyme	-
13746	GGA2	NM_015044.2	706	aggctgcaaacccgggttaataaag	127947	-	-	-	-
13747	GGA3	NM_014001.2	905	tggacacgaccacaacagttgtcc	127980	-	-	-	-
13748	APC	NM_000038.2	1585	aggctacgtatgctctatgaaa	128034	-	-	see also 7 line	-
13749	APCL	NM_005883.1	4521	ctgccacgcggaacatagtctgc	128246	-	-	signal_transduction, cell cycle	-
13750	PKP1	NM_000299.1	1509	cgccagacacatgcgaactact	128269	-	-	see also 263 line	-
13751	FRZB	NM_001463.2	780	aagaactatttcoggacaatta	128277	-	-	receptor activity, transmembrane receptor	-
13752	GFR	NM_012294.1	471	atgttcgcgtaggaaacgtaaa	128301	-	-	signal_transduction	-
13753	CSE1L	NM_001316.2	209	cgcagctcagctgagaaatttc	128323	-	-	see also 5262 line	-
13754	RBX1	NM_014248.2	196	caggcgtccgctactctcagaaga	128424	-	-	see also 869 line	-
13755	ABO26190	NM_014458.3	553	ttagctataccctccagataaca	128438	-	-	see also 5886 line	-
13756	ABTB1	NM_032548.2	851	ccgagctccgaggtgactttgg	128487	-	-	see also 9242 line	-
13757	ABTB2	NM_145804.1	1201	tgggtccgagtgagggttaacacc	128505	-	-	-	-
13758	AKAP10	NM_007202.2	271	aagcttcaatatccgtacattcc	128517	-	-	see also 5002 line	-
13759	AKAP9	NM_005751.3	1459	cagttcgaaactgatatagtaca	128590	-	-	signal_transduction	Alzheimer disease(アルツハイマー病)
13760	AMFR	NM_001144.3	1840	aagctcgcgaacggttcttgaac	128852	-	-	receptor activity, signal_transduction	-
13761	ANKFY1	NM_016376.2	1177	cagtgcaaacacactagatttaga	128883	-	-	-	-
13762	ANXA11	NM_001157.2	1686	acgacatctcgggagacttcca	128934	-	-	-	-
13763	APBA2	NM_005503.2	1195	atggaacctgtgacaataacaac	128939	-	-	see also 3845 line	-
13764	APBA3	NM_004886.2	308	cagtggtgagaaactgatgagt	128952	-	-	-	-
13765	APBB3	NM_006051.2	1245	cagaagtagcggagcactgtatat	128962	-	-	protein transporter	-
13766	APP	NM_000484.1	1602	tcggcctcgtcagctgtccaata	128969	-	-	-	-
13767	APPL	NM_012096.1	1623	atgaactatgcgcgaactotta	129069	-	-	see also 377 line	-
13768	ARHGDI	NM_004309.3	440	cggggttaaccggagagatagt	129088	-	-	see also 5115 line	-
13769	ASE-1	NM_012099.1	1095	tggggctgcgcagaataatgatgt	129092	-	-	see also 2884 line	-
13770	AVEN	NM_020371.1	404	tgggtagatatacaagatttga	129101	-	-	apoptosis	-
13771	BAG1	NM_004323.2	697	atggttgcgggtgcatgttaatt	129118	-	-	see also 2894 line	-
13772	BAG2	NM_004282.2	426	aagaacttcaccctgaagtgt	129125	-	-	apoptosis	-
13773	BAG4	NM_004874.2	681	tgggagctatgggtcccaatacc	129148	-	-	see also 3387 line	-
13774	BAG5	NM_004873.1	574	ctgcgtaactgatgagtttgaag	129187	-	-	apoptosis	-

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13775	BAI1	NM_001702.1	1902	gtgtcccgagcccatgagatct	129217	-	see also 1114 line	apoptosis, cell_cycle, kinase_related	protein binding	hepatocellular carcinoma(肝癌)、non-hodgkin lymphoma(非ホジキンリンパ腫)、malignant mesothelioma(悪性中皮腫)、lymphoma(リンパ腫)
13776	BCL10	NM_003921.2	941	tggacaacctgtgtgaatctatt	129233	-	-	-	-	-
13777	BCL2L10	NM_020396.2	611	ctgtcatgctgtttaaacacagg	129248	-	-	-	-	-
13778	BCL6B	NM_181844.2	1229	gtgagctctgcgctttgacagg	129260	-	-	-	-	-
13779	BTBD1	NM_025238.1	1119	gggacgagtgtatgaatcagatt	129283	-	-	-	protein binding	-
13780	BTBD11	NM_152322.1	379	ctgcatagagattgtatttga	129298	-	-	-	-	-
13781	BTBD12	NM_032444.1	2267	cagtgaccccccaattccaattg	129332	-	-	-	-	-
13782	BTBD14A	NM_144653.2	1668	gagactgacggcgtgaatttg	129345	-	-	-	-	-
13783	BTBD14B	NM_052876.2	1189	gcgtctcccgctgaacttat	129348	-	-	-	-	-
13784	BTBD2	NM_017797.2	1060	aagccacgagtgaggatttctga	129359	-	-	-	protein binding	-
13785	BTBD3	NM_014962.2	1370	cggggtatttaactctcaataga	129391	-	-	-	-	-
13786	BTBD5	NM_017658.1	169	cagcgtcagcccgctattttaaag	129406	-	-	-	-	-
13787	BTBD6	NM_033271.1	1168	gtggacagaaagggtatttgc	129436	-	-	-	-	-
13788	BTBD9	NM_152733.1	1067	ccgttcggcgcacgagatttaagc	129467	-	-	-	-	-
13789	C16orf44	NM_024731.2	167	gagtgctcggcccatcaagatc	129504	-	-	-	-	-
13790	C3P1	NM_021633.2	1213	atggccgttcccgcttagttca	129538	-	-	-	-	-
13791	C6orf46	NM_181842.1	1523	cagtgctggccgagattaacgtcc	129556	-	-	-	-	-
13792	CALB1	NM_004929.2	926	cogaacgatatgtctcttcttc	129573	-	-	-	-	-
13793	CALM1	NM_006888.2	520	acgtcacgtcatgacaaactag	129582	-	-	-	protein binding	-
13794	CALM3	NM_005184.1	538	caggtcaattatgaagagttgt	129585	-	-	-	protein binding	-
13795	CARD11	NM_032415.2	2088	cgggttgacgccttagatctgg	129618	-	-	-	-	-
13796	CARD14	NM_024110.2	1749	aggcgacccacacacctgattatg	129635	-	-	-	-	-
13797	CBLB	NM_170662.2	1511	aggcaactgagcccaatactgtgg	129676	-	-	-	-	-
13798	CBLG	NM_012116.2	1226	ctgggaggccgctgagttctacc	129726	-	-	-	-	-
13799	CCIN	NM_005893.1	1260	ttgccccaaaggcgggtatgtctcc	129764	-	-	-	-	-
13800	CD2	NM_001767.2	462	atggaactgaccccggaattaaac	129791	-	-	-	-	-
13801	CD24	NM_016382.1	1039	gggggagcaccatctactctatg	129824	-	-	-	-	-
13802	CD28	NM_006139.1	317	acgacaatggcgtcaaccttagc	129830	-	-	-	-	-
13803	CD3Z	NM_000734.2	161	caggcacagtgtccgattacaga	129843	-	-	-	-	-
13804	CD48	NM_001778.2	304	gtggcgactgtactctctaaag	129856	-	-	-	-	-
13805	CD58	NM_001779.1	456	cagccatcgaggacttaataatg	129884	-	-	-	-	-
13806	CD8B1	NM_004931.2	330	cgggatgcaagccggttctattct	129902	-	-	-	-	-

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13807	CDC37	NM_007065.3	750	cagacaatcgtcatgcaatttat	129919	-	cell cycle, kinase related	protein binding	-
13808	CIB1	NM_006384.2	419	atgatgacggaaacctgaacaga	129969	-	-	protein binding	-
13809	CKN1	NM_000082.1	615	ctggtctccacgttatgactata	129987	-	transcription_regulator	RNA polymerase II	Cockayne syndrome(コケーン症候群)
13810	CKTSF1B1	NM_013372.4	593	ttgcatatcatcctgattggatt	130018	-	-	transcription factor	-
13811	CLSPN	NM_022111.2	3742	atgccaagtccctatggattat	130086	-	see also 8273 line	-	-
13812	CKN1	NM_006314.1	1489	atgtgggtcgtatcctcatatc	130105	-	-	-	-
13813	CRHBP	NM_001882.2	494	ctgacgcgtacatagatttctgt	130119	-	signal_transduction	protein binding	-
13814	CR1	NM_014335.1	494	tggcgggtttcagatgcattatg	130136	-	-	-	-
13815	DAG1	NM_004393.1	1504	cggactcagagcggcattatc	130154	-	receptor activity	laminin receptor	-
13816	DBT	NM_001918.1	910	ttgtctctggaataaaactcctc	130185	-	-	protein binding	maple syrup urine disease(メープルシロップ尿症)
13817	DLG5	NM_004747.2	1692	tggcgcgttaagggtcaatgact	130338	-	cell cycle	-	-
13818	DLGAP2	NM_004745.3	2092	cgcggctcgcgggaatacaact	130387	-	-	protein binding	-
13819	DMN	NM_015286.4	2369	aggagcccgtaggtatgtcagc	130432	-	-	-	-
13820	DMX1	NM_005509.3	4503	cagtcacgtccgcacttacttgg	130607	-	-	-	-
13821	DNAJC7	NM_003315.1	358	gagccctagaactggatcataaa	130750	-	see also 2247 line	-	-
13822	DNCL2B	NM_130897.1	154	cagagtcataaagggttattgg	130773	-	see also 9555 line	-	-
13823	DOK2	NM_003974.1	1017	tccgacctgaccacatacagata	130792	-	see also 2720 line	-	-
13824	DPT	NM_001937.3	580	gtgcgggtagtgaatacgaact	130820	-	-	protein binding	-
13825	DRE1	NM_017644.2	1098	cagttgaagtggaccacattgac	130850	-	see also 7070 line	-	-
13826	DRPLA	NM_001940.2	578	cagcgcacctgaggatatacgaac	130890	-	see also 1238 line	-	-
13827	DTNA	NM_001390.2	1147	aagaagctgaactaatgcattaa	130927	-	signal_transduction	-	-
13828	DTNB	NM_021907.3	333	atgtcatcagactatcaactaac	130958	-	see also 8186 line	-	-
13829	EMILIN1	NM_007046.1	2766	tgggcacccggcagcagaaagtg	131009	-	-	-	-
13830	EMILIN2	NM_032048.1	2948	tggtagaacgcagcgggagtgatc	131046	-	see also 9073 line	-	-
13831	ENG	NM_000118.1	462	gagagggggcggaggtaacatatac	131051	-	-	protein binding	Rendu-Osler-Weber disease(ランデュ・オスラー・ウェーバー病), hereditary hemorrhagic telangiectasia(遺伝性出血性毛細血管拡張症)
13832	ESPL1	NM_012291.3	1054	aagaggccctatagacttgatgc	131078	-	apoptosis	-	-
13833	EVI5	NM_005665.2	1065	gtgtttcgttgtagattagcact	131170	-	see also 3930 line	-	-
13834	FBF1	NM_015898.2	1870	cgcgcacccagcggtaacttoaca	131204	-	-	-	-
13835	FBXL2	NM_012157.2	871	ctgcccagatctccatttgact	131229	-	-	-	-
13836	FLJ10572	NM_018143.1	470	aagccgtaactcggagtaactgtac	131243	-	see also 7277 line	-	-
13837	FLJ11078	NM_018316.1	1603	gtgtcgtcgttggaagtactatgt	131290	-	-	-	-
13838	FLJ12587	NM_022480.2	1755	tgggaccacagaggtaagtaagact	131296	-	see also 8402 line	-	-
13839	FLJ13057	NM_178439.3	323	cgggcccacggattctgtactgt	131298	-	-	-	-
13840	FLJ13063	NM_024742.1	1420	acgcgagggaaccattctgactac	131303	-	see also 8721 line	-	-
13841	FLJ14360	NM_032775.2	312	tggctcgtctcgcgacttaacttc	131312	-	-	-	-
13842	FLJ31322	NM_152387.1	317	tggacgctcttttaataactttt	131345	-	see also 9847 line	-	-
13843	FMOD	NM_002023.2	145	atgaccttaccctgattgagacc	131360	-	-	protein binding	-
13844	FYB	NM_001465.2	595	aagccactaggcccgaaatctg	131369	-	signal_transduction, kinase related	protein binding	-
13845	GIP2	NM_005101.1	508	ctgagccacgtgttcatgaatct	131403	-	-	translation	-

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13846	GAB1	NM_002039.1	1259	atgtcgcttcacgtagtaaac	131434	-	signal_transduction	-	-
13847	GAN	NM_022041.2	372	aggatatcagtaatagttatga	131456	-	protein binding	-	-
13848	GDF5	NM_000557.2	977	cagaggtagctgtttgacattag	131508	-	see also 408 line	-	-
13849	GMCL	NM_022471.2	240	cggcagctacaggtctctgttac	131513	-	-	-	-
13850	GRF2	NM_005312.2	3229	gaggaaacgacacattataaac	131593	-	signal_transduction, kinase_related	-	-
13851	GTF3C2	NM_001521.1	1142	atggcacctctaccgaataaac	131608	-	see also 1045 line	-	-
13852	HAT1	NM_003642.1	683	ttgcagcgttagctacatgaca	131663	-	see also 2459 line	-	-
13853	HLA-DMA	NM_006120.2	280	gtgcctgcctgcgcgaattgc	131689	-	receptor_activity	protein binding	-
13854	HOMER1	NM_004272.2	405	atgtatagggataatcagttta	131703	-	-	-	-
13855	HOMER3	NM_004838.2	692	gcgcagcggcctaagaagatgt	131720	-	signal_transduction	-	-
13856	HSPB2	NM_001541.2	87	cggccaccgcgagtagcaattt	131723	-	-	protein binding	-
13857	HUMGT19								
13857	8A	NM_013290.3	538	gagagagattgaagaacattaaa	131734	-	-	-	-
13858	HYPE	NM_007076.1	1156	ttgcagccttagcccatataaa	131741	-	cell_cycle	-	-
13859	IF35	NM_005533.2	773	gagagtctctcgtatgtgaatg	131747	-	-	protein binding	-
13860	INADL	NM_005799.2	3888	cagatcacgcgatgagcatattg	131844	-	-	-	-
13861	INHA	NM_002191.2	1182	aggttactcttcaagtatgaga	131890	-	see also 1398 line	-	-
13862	INHBA	NM_002192.1	335	ctgaacgcgatcagaaagcttca	131895	-	cell_cycle, apoptosis, signal_transduction	inhibin	-
13863	IRS1	NM_005544.1	4311	gaggcatagctcgcgagactttct	131931	-	kinase_related, signal_transduction	transmembrane receptor protein tyrosine kinase docking protein	atherosclerosis(粥状硬化症)、diabetes mellitus(糖尿病)、diabetes(糖尿病)
13864	ISLR	NM_005545.2	389	gtgcctaccgcgagactagaatcc	131934	-	see also 3861 line	-	-
13865	ITGB1	NM_002211.2	1782	ctgcgaggtgtgataattcaact	131960	-	receptor_activity, signal_transduction	-	-
13866	ITGB1BP2	NM_012278.1	633	gggtgcagagctcgttagacatga	132001	-	see also 5253 line	-	-
13867	IVNS1ABP	NM_006469.2	1208	aaggagttcaaaccttgactac	132033	-	see also 4537 line	-	-
13868	KBTD3	NM_152433.2	1353	cagttatgctctcgatagatta	132100	-	see also 9863 line	-	-
13869	KBTD4	NM_016506.3	1583	atgtcttcgggaccgatatataa	132150	-	see also 6881 line	-	-
13870	KBTD5	NM_152393.1	968	gaggagccggaagctactctcc	132155	-	-	-	-
13871	KBTD6	NM_152903.1	1668	tggtaattcgagactatctctat	132161	-	-	-	-
13872	KBTD7	NM_032138.3	2213	atgcacgaggtgagtagtagtact	132195	-	-	-	-
13873	KCNA1	NM_000217.1	1132	atgtacacctgtgacaattggagg	132204	-	channel	protein binding	ataxia(運動失調)、paroxysmal ataxia(発作性運動失調)
13874	KCNA10	NM_005549.2	617	gagccagtggtctctaataagaagg	132216	-	channel	-	-
13875	KCNA2	NM_004974.2	1677	gtgcgattgcagggtgttaact	132247	-	see also 3464 line	-	-
13876	KCNA3	NM_002232.2	1029	acgtcgaggaactcattcgaagc	132257	-	see also 1425 line	-	-
13877	KCNA5	NM_002234.2	1278	cagggttctccgggaacatcatg	132290	-	channel	protein binding	-
13878	KCNA6	NM_002235.2	1546	atgaagacgactctcacacattt	132293	-	see also 1433 line	-	-
13879	KCNA7	NM_031886.2	1366	gggtggaactccatttactagc	132308	-	channel	-	-
13880	KCNB1	NM_004975.2	1908	atgcgaagtatgtcaagcatga	132332	-	see also 3468 line	-	-

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13881	KCNB2	NM_004770.2	816	gtgcgacgactataatctgaacg	132350	-	channel	protein binding	-
13882	KCN1	NM_004976.2	1372	gtgaacaatttcggatgtat	132413	-	see also 3470 line	-	-
13883	KCN2	NM_139136.2	1648	gagggtcttgagacatactcttc	132430	-	channel	-	-
13884	KCN3	NM_004977.2	1285	cggggcacctcgcggagacaatca	132463	-	channel	voltage-gated potassium channel	-
13885	KGN4	NM_004978.2	1692	gggacagcacctgcagtgatacc	132472	-	see also 3471 line	-	-
13886	KCN1	NM_004979.3	2005	cagcctgtactcatcttcaca	132485	-	-	-	-
13887	KCN2	NM_012281.2	1735	ttgtgcgtagtgtcatgagtatc	132496	-	see also 5255 line	-	-
13888	KCN3	NM_004980.3	2118	ctgctcccgctgtagtaagaaga	132536	-	see also 3473 line	-	-
13889	KCN1	NM_002236.4	751	gtgtgtcatcggaggtgtactatt	132546	-	channel	-	-
13890	KGN4	NM_133490.2	411	togtgcagctctgcgagtattac	132553	-	channel	-	-
13891	KGN4	NM_173605.1	683	cagcgccagcctggaatggtaac	132566	-	channel	-	-
13892	KCN1	NM_002251.3	410	ctgtcccgggagaacacactatga	132579	-	channel	-	-
13893	KCN3	NM_002252.3	920	ctgcctctccgctaagcttatcg	132596	-	see also 1448 line	-	-
13894	KCN1	NM_014379.2	672	ccgatatgtctgcactactacc	132613	-	channel	-	-
13895	KCTD10	NM_031954.2	276	gggaagcactttggtacgatact	132648	-	channel	-	-
13896	KCTD12	NM_138444.2	1034	ggcctacacctcgcgctattacc	132664	-	channel	-	-
13897	KCTD13	NM_178863.2	458	cggccgctcaacttggtaaatcc	132668	-	see also 10225 line	-	-
13898	KCTD14	NM_023930.2	317	aggctcagttctacgaataatcaag	132675	-	channel	-	-
13899	KCTD15	NM_024076.1	493	aggataagccgcctcttcaatgg	132687	-	channel	-	-
13900	KCTD3	NM_016121.2	212	acgtaggggggaccagatttagt	132691	-	channel	-	-
13901	KCTD6	NM_153331.2	763	tagtactcgggaagcttcttaagt	132791	-	see also 9986 line	-	-
13902	KEAP1	NM_012289.2	1591	ggggaacgagtggcgaatgatca	132814	-	transcription_regulat or	protein binding	-
13903	KIAA0469	NM_014851.1	1236	gcgtgtggaggtacaaactcaagc	132819	-	-	-	-
13904	KIAA0711	NM_014867.1	2450	tggctctgcagcgcttcatctac	132830	-	-	protein binding	-
13905	KIAA0795	NM_025010.1	758	tgtgtcgttgctgcacaaatgc	132835	-	-	-	-
13906	KIAA1309	NM_033495.1	245	caggaccctacacgcgatotttacc	132842	-	see also 9428 line	-	-
13907	KIAA1354	NM_018847.1	616	gtgtattgcaaggcttggatca	132880	-	-	protein binding	-
13908	KIAA1900	NM_052904.1	1886	cggatcctgtgcggcatataga	132910	-	-	-	-
13909	KIP2	NM_006383.1	91	aagctgcattcgcgattctatga	132922	-	-	protein binding	-
13910	KLHL6	NM_130446.1	119	acgacgcggagctctcottaatt	132929	-	-	-	-
13911	KLHL8	NM_020803.3	809	atggacatgcggatcagtatgc	132984	-	-	protein binding	-
13912	KNTC1	NM_014708.2	4171	ttgtccttgtagatcttgacc	133157	-	cell cycle	-	-
13913	KPNA1	NM_002264.1	1113	aggaaagcatgttgagacgatctc	133275	-	see also 1450 line	-	-
13914	LCP2	NM_005565.2	391	gtgccgattctcagtaagtaag	133296	-	signal_transduction , kinase related	USF43/USF44 complex	-
13915	LGALS3B								
13915	P	NM_005567.2	538	gtgtggtctgcaccaatgaacc	133315	-	receptor_activity, signal_transduction	-	-
13916	LIMD1	NM_014240.1	238	gggagtagaggccctgtcaatgg	133325	-	signal_transduction	-	-
13917	LIN7A	NM_004664.1	376	atgcatgaacgataactgttaa	133351	-	transcription_regulat	-	-

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13918	LMNA	NM_005572.2	1620	aagccgcagaatggagatgac	133363	-	-	mandibuloacral dysplasia(下顎顔面先端形成不全症)、atherosclerosis(粥状硬化症)、cardiomyopathy(アルコール性心筋症)、limb girdle muscular dystrophy(肢帯型筋ジストロフィー)、lipodystrophy(リポジストロフィー)、progeria(早老症)、Emery-Dreifuss muscular dystrophy(エメリ・ドレフュス型筋ジストロフィー)、Charcot-Marie-Tooth disease(シャルコー・マリー・トゥース病)、dilated cardiomyopathy with conduction defects(興奮伝導障害に伴う拡張型)
13919	LOC92799	NM_138392.1	363	gagttgatgatcttctgttgg	133370	-	channel	-
13920	LRP6	NM_002336.1	3472	caggtgctaacccggatagatta	133510	-	see also 1499 line	-
13921	LRPAP1	NM_002337.1	532	gcgggagttctgcatcacaaag	133558	-	receptor_activity	lipoprotein binding
13922	LTBP2	NM_000428.1	3329	ctgatggagatgcgctcaattcc	133570	-	see also 333 line	Alzheimer disease(アルツハイマー病)
13923	LTBP4	NM_003573.1	3163	gtgaacgagtgaaacactaca	133599	-	-	-
13924	LY64	NM_005582.1	1422	tggcatttaccgcgttacacatt	133640	-	receptor_activity	receptor
13925	MADH2	NM_005901.2	1456	aagccgctctatcagctaactaga	133708	-	see also 4111 line	-
13926	MADH6	NM_005585.2	1813	ctgtccgattccacattgtctta	133719	-	kinase_related, transcription_regulator or	receptor signaling protein serine/threonine kinase signaling protein
13927	MADH7	NM_005904.1	889	tagccgactctcgaactagagt	133726	-	see also 4119 line	-
13928	MALT1	NM_006785.2	1866	gggttaagtgtccacttaccacaaag	133779	-	see also 4779 line	-
13929	MAP3K7IP	NM_006116.1	216	gggtcttcaacggctatgatgg	133811	-	kinase_related	protein binding
13930	MEN1	NM_000244.2	469	aggtctccgatgtcatatgaac	133824	-	transcription_regulator or	bronchial Adenomas/Carcinoids(気管支腫瘍/カルチノイド)、lipomatous tumors(脂肪腫性腫瘍)、angiofibroma(血管線維腫)、carcinoid tumor of lung(肺カルチノイド)、hyperparathyroidism(副甲状腺機能亢進症)、lipoma(脂肪腫)、multiple endocrine neoplasia(多発性内分泌腫瘍)、pancreatic cancer(膵臓癌)、parathyroid adenoma(副甲状腺腺腫)
13931	MGC10485	NM_052875.2	750	caggctctgactttgagttac	133837	-	see also 9440 line	-
13932	MGC23166	NM_152735.2	1617	ccgccaccgggacactatgcaagg	133860	-	transcription_regulator or	-
13933	MGEA6	NM_005930.1	2434	atgcaagaggcccatcttggaga	133887	-	stem cell factor receptor binding	-
13934	MICB	NM_005931.2	486	ttggctatgaacgtcacaaattt	133889	-	-	-
13935	MID1	NM_000381.1	284	ggccccaccgcatcctagtatca	133896	-	see also 303 line	-
13936	MPDZ	NM_003829.1	2287	tggtagccgactcattgttggaa	133993	-	-	-
13937	MPP2	NM_005374.2	1609	cggggctacgggacactacttga	134113	-	kinase_related, signal transduction	guanylate kinase
13938	MPP6	NM_016447.2	1375	tagtattgaatcccactagattt	134141	-	-	-

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13939	MPZL1	NM_003953.3	938	atgcggatattccgaagaataa	134158	-	signal_transduction, kinase_related	-	-
13940	MTPN	NM_145808.1	356	cagatttgggcagcttgaatc	134160	-	protein binding	-	-
13941	NMNAT1	NM_022787.2	257	aggaaggtagacacagttgcaag	134162	-	-	-	-
13942	NPHP1	NM_000272.1	1156	aggtagagacaaagtgtatttc	134198	-	signal_transduction	-	medullary cystic kidney disease(髄質性嚢胞腎)、nephronophthisis(ネフロン病)、Senior-Loken syndrome(Senior-Loken症候群)
13943	NPHP4	NM_015102.2	3223	gggtcgccggtcttctgagttt	134264	-	see also 6242 line	-	-
13944	NUDT5	NM_014142.2	994	tggacgcagaggtctatctctac	134290	-	phosphatase	protein binding	-
13945	OGT	NM_003605.3	449	ctggcagaagcttatttcgaattt	134296	-	see also 2417 line	-	-
13946	OIP106	NM_014965.1	1075	ctgctatcgcaaatattgattt	134424	-	-	-	-
13947	OIP5	NM_007280.1	481	gggattcccggttgggttccatct	134454	-	protein binding	-	-
13948	OSTF1	NM_012383.3	736	atgcagttcgaaacattaaagcaat	134478	-	see also 5304 line	-	-
13949	P29	NM_015484.1	604	tagccggagagctccttataatg	134492	-	-	-	-
13950	PDHX	NM_003477.1	194	tcgggggtagtcccaataagatac	134505	-	see also 2351 line	-	-
13951	PEA15	NM_003768.2	406	ccgtcccgactactactactatgg	134551	-	molecular_function unknown	-	-
13952	PEX12	NM_000286.1	1401	ctgtacaccttagactataactct	134576	-	see also 250 line	-	-
13953	PFDN4	NM_002623.2	77	ttagcaggaatacaagtagaatac	134586	-	tubulin-specific chaperone	-	-
13954	PGLYRP1aI	NM_052891.1	714	cagactgtcgtcgcgaacataca	134601	-	receptor_activity	-	-
13955	PGLYRP1b	NM_020393.1	758	atgactctccagcgaagtatgg	134618	-	receptor_activity	-	-
13956	PGRP-L	NM_052890.2	149	tggatctactctggattgctact	134626	-	receptor_activity	-	-
13957	PHC2	NM_004427.2	1153	tagaagacgtctacgaattcatc	134649	-	see also 2959 line	-	-
13958	PHIP	NM_017934.4	3803	tggcatatccaacggatctaat	134762	-	signal_transduction	-	-
13959	PI3	NM_002638.2	139	acggaggtctctgttaaaggtca	134821	-	serine protease inhibitor	-	-
13960	PMPCA	NM_015160.1	90	gcgtacagacgggttagtagtgg	134827	-	-	-	-
13961	PNRC1	NM_006813.1	726	tgtatgagcaacccaagaataaa	134860	-	protein binding	-	-
13962	PROZ	NM_003891.1	122	aagcgtcgggctctctcttct	134867	-	see also 2646 line	-	-
13963	RAD21	NM_006265.1	369	gagtagttcgaatctatcacagg	134895	-	see also 4356 line	-	-
13964	RBBP6	NM_006910.4	1189	atgcgcagacgaagaagaataat	134943	-	see also 4848 line	-	-
13965	RCBTB1	NM_018191.2	824	ctggacaattggcagaggtatgg	135100	-	-	-	-
13966	RCN2	NM_002902.1	860	aagaggaggcgcttcatctaat	135134	-	protein binding	-	-
13967	RGS19IP1	NM_005716.1	729	tgcgaagcccttcgacatgatca	135138	-	signal_transduction, gpcr	protein binding	-
13968	RGS20	NM_003702.2	705	cagtccttatcgaggaaatctat	135150	-	signal_transduction, gpcr	protein binding	-
13969	RHOBTB3	NM_014899.1	2087	atggcgtcgatgacttacttga	135206	-	see also 6083 line	-	-
13970	RINI	NM_004292.1	395	acgttctcgtgcggaaataa	135214	-	-	-	-
13971	RINZF	NM_023929.2	1950	tgttcaaaacttgcgaaatttc	135236	-	protein binding	-	-



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13972	RPC8	NM_138338.1	279	ctgctggtgttttcattccatcc	135267	-	transcription_regulat	-	-
13973	RPE65	NM_000329.1	1202	tagtcacgtctcccaatacaact	135304	-	see also 276 line	-	-
13974	RPGR	NM_000328.1	1770	cagccagctacgactatcgagc	135365	-	-	-	-
13975	RTKN	NM_033046.1	1211	aggaagagccgctgcttactatt	135383	-	signal_transduction	oligosaccharyl transferase	-
13976	RTN4	NM_007008.1	552	caggcgctctctttagttgatg	135398	-	apoptosis	-	-
13977	SAG	NM_000541.2	716	agctcctgctgacttactgatcc	135496	-	phosphatase, signal_transduction	protein phosphatase	Oguchi disease(小口病)
13978	SARCOSIN	NM_006063.1	449	ctgtctagcctcacttaagattag	135520	-	-	-	-
13979	SBB126	NM_018846.2	2001	aggacacattctcgaataata	135615	-	see also 7601 line	-	-
13980	SCAP1	NM_003726.2	618	aggatagcgcagctatgattt	135633	-	kinase_related, signal_transduction	-	-
13981	SEC23IP	NM_007190.2	1020	agggcgctacgatgtttcctct	135661	-	-	-	-
13982	SEMA6A	NM_020796.1	1112	tggacacattcggggatgaattc	135738	-	see also 7972 line	-	-
13983	SENP2	NM_021627.1	666	cctgtcccatagcaaaaggtaato	135797	-	see also 8154 line	-	-
13984	SERPINA4	NM_006215.2	1209	cagcttcgcgatacaaatcttct	135858	-	-	serpin	-
13985	SERPINA7	NM_000354.2	588	cagcaccacaaactgagattgtg	135864	-	-	transporter	hyperthyroxinemia(高サイロキシン血症)
13986	SERPINB1	NM_005024.1	1066	gggagtgagatagatatacgaat	135912	-	-	serpin	-
13987	SERPINB6	NM_004568.3	228	cagatggccacagatacttctt	135918	-	-	serpin	-
13988	SERPINB8	NM_002640.3	217	aggacaaactcaagaaacgtatc	135925	-	-	serpin	-
13989	SERPINB9	NM_004155.3	525	tgcgggtagctcaattgatgc	135949	-	-	serpin	-
13990	SGTA	NM_003021.3	840	gagcagtgcttcgaaactaatga	135969	-	-	protein binding	-
13991	SHANK2	NM_012309.1	40	atgatgacgggctacaataatgg	135973	-	-	-	-
13992	SLOC12A9	NM_020246.2	2802	tggcgctactggagactctaacc	136035	-	-	-	-
13993	SLOC9A3R2	NM_004785.1	576	tgggttcaacctgcagtatgaca	136036	-	-	-	-
13994	SLIT1	NM_003061.1	4072	cagcgagcgccgacctctatgtg	136071	-	-	-	-
13995	SLIT2	NM_004787.1	3482	atgcagtgaacggctatagctgc	136185	-	see also 3302 line	-	-
13996	SLIT3	NM_003062.1	1179	ccggaggcgatcgctgaataacg	136211	-	-	-	-
13997	SMO	NM_005631.3	1732	ccgggaactatgtgctatgcagg	136262	-	gpcr, receptor activity, signal_transduction	protein binding	skin cancer(皮膚癌)
13998	SNOAIP	NM_005460.1	322	aagcggttctgcgactgaaca	136267	-	-	protein binding	Parkinson disease(パーキンソン病)
13999	SNX6	NM_021249.2	1156	atgttctacagccgaaacttcc	136327	-	receptor activity	-	-
14000	SOGS5	NM_014011.3	597	agggcgctacggcgtaagtctgt	136355	-	kinase_related, signal_transduction	-	-
14001	SORCS2	NM_020777.1	1293	aagtgatgacgctataaacctac	136411	-	receptor activity, signal_transduction	-	-
14002	SPEC1	NM_020239.2	429	cggattgacgggaccatgatgg	136427	-	signal_transduction	-	-
14003	SPEC2	NM_020240.1	63	acggcggttgacagagaagtatga	136434	-	kinase_related, signal_transduction	-	-
14004	SPOP	NM_003563.2	1198	gtggagaacgctgcagaattct	136451	-	-	protein binding	-
14005	STIM1	NM_003156.2	2526	ggaggaggaataatggctctatgg	136475	-	see also 2129 line	-	-
14006	STIM2	NM_020860.1	2441	aggagattcgctgtaactgtgg	136517	-	-	protein binding	-

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14007	TA-KRP	NM_032505.1	279	ctgaatgatggatttagttg	136533	-	-	-	-
14008	TANK	NM_004180.2	261	gagaactatgagacagaataacg	136596	-	signal_transduction	-	-
14009	TCEB3	NM_003198.1	1947	cagcggctacgagtactaaca	136671	-	see also 2160 line	-	-
14010	TGFA	NM_003236.1	363	tggctgtccttatcatcacatgt	136682	-	kinase_related,	protein tyrosine	neuroblastoma(神経芽細胞腫)、squamous cell
14011	TIP-1	NM_014604.1	304	aagacggacaagggtatttgt	136689	-	cell_cycle	kinase	cancer(扁平上皮癌)
14012	TNFAIP1	NM_021137.3	1103	aagcctcacacacttaacgtga	136697	-	channel	voltage-gated	-
14013	TNIP1	NM_006058.2	2066	aggggttcgaaatccaatcaga	136711	-	-	potassium channel	-
14014	TNKS	NM_003747.1	1924	gtgagagtacacctatactact	136758	-	-	protein binding	-
14015	TOB1	NM_005749.2	908	aggtgaacgcccccttaacctca	136825	-	see also 2565 line	-	-
14016	TOLLIP	NM_019009.2	370	gagacgcccacggcacaacatgg	136832	-	see also 3996 line	-	-
14017	TRIM14	NM_014788.2	657	tgggaagccgtggagagatcatta	136852	-	-	protein binding	-
14018	TRIP10	NM_004240.1	1533	cagcagggggcactatctctatgg	136872	-	see also 2847 line	-	-
14019	TRIP15	NM_004236.1	544	cagtcgtgccagactgatgatgg	136891	-	see also 2826 line	-	-
14020	TRIP6	NM_003302.1	980	tgggctgtttgtatgtctaca	136930	-	-	ligand-dependent	-
14021	TTC1	NM_003314.1	881	cggctcgtactccaatcaattcg	136961	-	see also 2246 line	thyroid hormone	-
14022	TWSG1	NM_020648.3	566	atgttcacgcgcctattccagt	136975	-	-	receptor interactor	-
14023	USH1C	NM_005709.1	497	tgcgcgatcaatggatattcc	136989	-	-	-	-
14024	VBP1	NM_003372.3	695	ttagcttcttcagatccaattt	137017	-	see also 2275 line	protein binding	-
14025	VPS26	NM_004896.2	114	gtgagatcgatatgtgtcttaat	137025	-	-	protein transporter	-
14026	VPS35	NM_018206.2	645	caggacacatagccgagatagaga	137065	-	see also 7319 line	-	-
14027	WWP1	NM_007013.3	414	ttgtatagggagaaattacgaaa	137069	-	signal_transduction	-	-
14028	XAB2	NM_020196.1	179	caggctcaatcagctatacagac	137078	-	transcription_regulat	-	-
14029	YAP1	NM_006106.2	1363	gagatggatacaggtgatactat	137108	-	transcription_regulat	-	-
14030	ZBTB4	NM_020899.2	1281	aagtaccocctgccctatttga	137114	-	or	protein binding	-
14031	ZBTB5	NM_014872.1	954	tagtgagatcatgtttgatcagt	137142	-	-	-	-
14032	ZBTB8	NM_144621.2	1266	cagatccaacccgtccaatcatct	137171	-	see also 6068 line	protein kinase C	-
14033	ZFP67	NM_015872.1	229	atgacctgattgggattccattc	137177	-	transcription_regulat	inhibitor	-
14034	ZNF- ZNF-	NM_006777.2	1037	ctgactggcgcgcagtaataca	137207	-	or	-	-
14035	U69274	NM_014415.1	529	tagatgatcccgctccaatataca	137263	-	see also 4776 line	-	-
14036	ZNF259	NM_003904.1	324	agggagtgccgtacactttgtct	137349	-	transcription_regulat	or	-
14037	ZNF499	NM_032792.2	619	tcgatcacagacagattatcgacg	137372	-	signal_transduction	zinc binding	-
14038	CALR3	NM_145046.2	652	gagtagcactggaaactaacatc	137388	-	transcription_regulat	-	-
14039	CANX	NM_001746.2	1431	ttgtgtgctgcgaagaatgttg	137433	-	or	-	-
						-	see also 1156 line	-	-

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14040	CASQ1	NM_001231.2	1184	aggagtgctcaatgttactgatg	137457	-	-	calcium ion storage	-
14041	CASQ2	NM_001232.1	201	aggacggagtgtaagtcttcc	137463	-	-	calcium ion storage	ventricular tachycardia(心室頻拍症)
14042	CLGN	NM_004362.1	1227	ctgttgataatcctaactaca	137517	-	see also 2925 line		
14043	FLJ20793	NM_019022.3	171	ctggccacagtggttgacttg	137538	-	see also 7663 line		
14044	AGPAT2	NM_006412.2	263	tcgtgcgaagctccaagctatt	137598	-	-	lysophosphatidate acyltransferase	Berardinelli-Seip congenital lipodystrophy(リポシストロフィ)
14045	AIF1	NM_001623.3	237	atggagtttgaccttaattgaaa	137598	-	cell cycle	-	-
14046	AKAP13	NM_006738.4	5754	ctgcccacgggtcattatagaaa	137704	-	kinase related, receptor activity	guanylate release factor	Alzheimer disease(アルツハイマー病)
14047	ANKRD5	NM_022096.4	1737	tgggtggccacagttattacaga	137817	-	see also 8268 line		
14048	ANXA1	NM_000700.1	175	caagcgtgagccctctactacc	137855	-	signal transduction	receptor binding	-
14049	ANXA10	NM_007193.2	1037	ttgcttcaggcattataagaaa	137890	-	see also 4995 line		
14050	ANXA13	NM_004306.1	689	cagttacgagccaccttcaagc	137902	-	-	calcium-dependent phospholipid	-
14051	ANXA3	NM_005139.1	948	cagcaattaaatcggtactctct	137933	-	phosphatase	phospholipase A2 inhibitor	-
14052	ANXA4	NM_001153.2	670	ctgttcccggaaccgaatacacc	137941	-	-	phospholipase inhibitor	-
14053	ANXA5	NM_001154.2	316	ttgacatcccgaaagtaagtctca	137957	-	-	phospholipase inhibitor	-
14054	ANXA6	NM_001155.2	1307	cggagctgacgaagacacaatca	137996	-	see also 733 line		
14055	ANXA7	NM_001156.2	760	atgcctctactgttactgaatgc	138022	-	channel	-	-
14056	ANXA8	NM_001630.1	921	gtgatggagaccctgataagaaac	138055	-	-	calcium-dependent phospholipid	-
14057	ANXA9	NM_003568.1	1201	cggcctagcttcgggtgatcaaga	138069	-	-	calcium-dependent phospholipid	-
14058	APBA2BP	NM_031231.2	354	gggcatctccacgacaatttaga	138076	-	-	calcium-dependent phospholipid	-
14059	ASPH	NM_004318.2	296	ttgatttgatctgttgactatg	138085	-	see also 2887 line		
14060	BMP1	NM_001199.1	1615	tcgtctctgacagggtccataac	138154	-	see also 779 line		
14061	BMPER	NM_133468.2	1354	caggacggaggtgcgaataaagc	138199	-	see also 9585 line		
14062	C14orf10	NM_017917.2	692	gagaggaagcggatgatcaatag	138231	-	see also 7172 line		
14063	C14orf143	NM_145231.1	461	tggtcacgtcagcgtttagagact	138275	-	-	-	-
14064	C1orf10	NM_016190.1	275	ctgtcttagtggtaaaagtgc	138282	-	receptor activity	peptidase	-
14065	C1orf22	NM_025191.2	197	aagtcgggtgacgttgatgatg	138290	-	-	receptor	-
14066	C1QR1	NM_012072.2	510	aggacacccctactactactgg	138352	-	receptor activity	trypsin	-
14067	C1R	NM_001733.2	959	ggctacacaccacgagatcatca	138362	-	-	trypsin	-
14068	C1S	NM_001734.1	563	acgggggttgcgtcatactatgt	138372	-	-	-	complement C1S deficiency(補体C1S欠損症)
14069	Cab45	NM_016176.2	730	acgtgtcttggagcagatataag	138451	-	-	-	-
14070	CABP1	NM_004276.3	473	caggtggacacaccagagacataga	138458	-	-	-	-
14071	CABP2	NM_016366.1	692	ctgttgacttcgaagagtttgt	138462	-	signal transduction	-	-
14072	CABP4	NM_145200.1	735	aggacagggatggacgaattac	138464	-	see also 9779 line	-	-
14073	CABP5	NM_019855.3	250	aggaccgagatgggttcatctct	138467	-	signal transduction	calcium ion binding	-
14074	CABP7	NM_182527.1	406	tggcacgacttgatgactgtct	138476	-	-	-	-
14075	CACNA1C	NM_000719.3	2320	gaggagcacattcgataacttcc	138504	-	see also 442 line	-	-

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14076	CACNA1D	NM_000720.1	4750	caggtagcgtgcaagagattag	138611	-	see also 445 line		
14077	CACNA1E	NM_000721.1	4867	ctgcgtcagcgtataccatcag	138727	-	see also 457 line		
14078	CACNA1F	NM_005183.1	1380	ctgcgtcgttcagctctctac	138755	-	see also 3643 line		
14079	CACNA1G	NM_018896.3	591	gtgtctccgcacaggctgtgaacc	138799	-	see also 7604 line		
14080	CACNA1H	NM_021098.1	6449	cgcgactcgtgaagcatccttcg	138852	-	channel	low voltage-gated calcium channel	-
14081	CACNA1I	NM_021096.2	161	tgccgcctattgccttctctgc	138855	-	channel, signal_transduction	-	-
14082	CACNA1S	NM_000069.1	4747	caggctacccctccaataggaga	138930	-	channel	dihydropyridine-sensitive calcium channel	hypokalemic periodic paralysis(低カリウム血症) 周期性四肢麻痺、malignant hyperthermia(悪性高体温症)
14083	CALB2	NM_001740.2	388	gggctccagcgcgcgagttatgg	138939	-	see also 1152 line		
14084	CALB3	NM_004057.1	192	aggtccaaacacccctagatgac	138947	-	-	calcium ion binding	-
14085	CALML5	NM_017422.3	282	gcgacggcgagcgggaatcagc	138951	-	signal_transduction	calcium ion binding	-
14086	CALN1	NM_031468.1	649	aagcgttgaagcacattctctat	138954	-	-	calcium ion binding	-
14087	CALU	NM_001219.2	772	ttgtgagtttcgggataagaac	138978	-	see also 795 line		
14088	CAPN1	NM_005186.2	2145	ctgcgcgtgcactttgacaattt	138995	-	-	calpain	-
14089	CAPN11	NM_007058.1	1621	cagcgagtcagtggaattggatg	139015	-	-	calpain	-
14090	CAPN2	NM_001748.3	1264	caggaaactacccgacacattct	139039	-	see also 1157 line		
14091	CAPN3	NM_000070.2	2389	gagtcctgcgtagcatgattgc	139102	-	-	muscular dystrophy(筋ジストロフィ)、limb girdle muscular dystrophy(肢帯型筋ジストロフィ)	-
14092	CAPN9	NM_006615.1	845	cggagcgcggtttgtcttatta	139125	-	-	-	-
14093	CAPNS1	NM_001749.1	503	cagcgccacagacatcgaaca	139149	-	-	calpain	-
14094	CAPNS2	NM_032330.1	319	tagcgatttcggcacaattta	139164	-	-	-	-
14095	CAPS	NM_004058.2	603	cggaaattccaggactactacagc	139179	-	-	-	-
14096	CAPS2	NM_032606.2	1223	aggatcgtatcagctgaatgaagc	139183	-	-	-	-
14097	CBARA1	NM_006077.1	571	tgggtctggatcaatatataata	139222	-	see also 4219 line		
14098	CD164L1	NM_020404.1	997	gtggttcgagtggttatgtagc	139241	-	-	melanoma(メラノーマ)	-
14099	CD97	NM_001784.2	1381	gagcagctttgcgactcctatgg	139255	-	gpcr、receptor_activity、signal_transduction	-	-
14100	CDH1	NM_004360.2	1284	acgaggtaacgtcgtgaatcacc	139286	-	-	ataxia telangiectasia(毛細血管拡張性運動失調症)、breast cancer(乳癌)、endometrial carcinoma(子宮体癌)、ovarian carcinoma(単純性卵巣癌)、melanoma(メラノーマ)、gastric	-
14101	CDH10	NM_006727.2	2385	aagctcgcggcgagattattcc	139372	-	-	molecular_function unknown	-
14102	CDH11	NM_001797.2	1007	tggaaatagcgcgaagttagtgt	139391	-	see also 1173 line	calcium ion binding	-
14103	CDH12	NM_004061.2	1833	tagccgaacacaaatagtcacac	139452	-	-	calcium ion binding	-
14104	CDH13	NM_001257.2	956	atgcctctcgtcggtataatc	139522	-	see also 818 line	calcium ion binding	-
14105	CDH15	NM_004933.2	742	tggctcgggtgtaaatctgacc	139553	-	-	calcium ion binding	-
14106	CDH16	NM_004062.2	269	gagggccatttgcctatggatcc	139558	-	-	calcium ion binding	-
14107	CDH17	NM_004063.2	2010	aagtcctatcgggtacaaagtg	139636	-	-	calcium ion binding	-
14108	CDH18	NM_004934.2	1028	tagaacggccttaccataacatgg	139676	-	see also 2738 line	calcium ion binding	-
14109	CDH19	NM_021153.2	1117	cagaacactacaggtattagagc	139764	-	-	calcium ion binding	-

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14110	CDH2	NM_001792.2	1737	atcgccggtaccatgttgacaaca	139854	-	see also 1160 line	
14111	CDH20	NM_031891.2	231	tggaccacgaccttggatgtcg	139898	-	see also 9045 line	
14112	CDH22	NM_021248.1	2388	atcgccgacaaagcgtcaacaata	139947	-	-	
14113	CDH23	NM_022124.2	1608	ggggaaaggcggacattcgtattc	139956	-	see also 8289 line	
14114	CDH24	NM_022478.2	349	ggggggcagcagcccgatttgg	140026	-	-	
14115	CDH26	NM_021810.3	272	aggaccacgcagggagtaagg	140048	-	-	
14116	CDH3	NM_001793.2	825	tgtttgcttactccatccatagc	140127	-	calcium ion binding	breast cancer(乳癌)
14117	CDH4	NM_001794.2	587	ggagatccgggtccgacaaagaca	140150	-	see also 1165 line	
14118	CDH5	NM_001795.2	1424	gagaagtctaccctggtataac	140200	-	calcium ion binding	-
14119	CDH6	NM_004932.2	1733	tagtcggagtagctctatatatta	140240	-	see also 3431 line	
14120	CDH7	NM_004361.2	1218	aaggtcttatacaataacgtcc	140281	-	see also 2920 line	
14121	CDH8	NM_001796.2	371	gtggatcccttggaaactaac	140323	-	see also 1166 line	
14122	CDH9	NM_016279.2	670	tggagtcggtacatctgttatc	140406	-	molecular_function unknown	
14123	CEGF3	NM_152753.2	1920	ctggccgaggaagaaagtattacc	140487	-	receptor_activity	-
14124	CELSR1	NM_014246.1	2937	tagcgctcgtgtagaaatccagg	140512	-	see also 5554 line	
14125	CELSR2	NM_001408.1	4259	gcgcgacgggtgtgtgtgtaca	140581	-	gpcr、receptor_activity、signal_transduction	
14126	CELSR3	NM_001407.1	3971	cagccgaaagctagacaataacc	140645	-	see also 975 line	
14127	CETN1	NM_004086.1	275	gggaaggcaggggaagatcagc	140689	-	calcium ion binding	-
14128	CETN2	NM_004344.1	182	tggcaccatagatttaagaac	140695	-	see also 2903 line	
14129	CETN3	NM_004365.1	367	tgcgaagttgtctagagaatt	140705	-	calcium ion binding	-
14130	CHGA	NM_001275.2	326	aggtcatctccgacacactttcc	140716	-	calcium ion binding	small cell lung cancer(肺癌)
14131	CHP	NM_007236.3	384	cctggatttcgcgaactttgg	140722	-	signal_transduction	
14132	CLSTN1	NM_014944.1	968	ctgctcgcgtgataaagatgc	140727	-	-	
14133	CLSTN2	NM_022131.1	2640	acgattctgcgtgactatcaca	140809	-	see also 8296 line	
14134	CLSTN3	NM_014718.1	1752	aggaaccatcgtatgtaacact	140818	-	see also 5912 line	
14135	CLTA	NM_001833.1	402	ctgaaagtatcgtaaataggaga	140837	-	-	
14136	CLTB	NM_001834.2	596	cagcgacagagtgacaagtaga	140844	-	-	
14137	CPNE6	NM_006032.2	606	cagcaagtctgacctttcatgg	140852	-	transporter	
14138	CRB1	NM_012076.1	1916	aagctctactccacttgaagat	140894	-	see also 5111 line	
14139	CRELD1	NM_015513.2	1212	agggccaggtcgctgtaagaagt	140961	-	see also 6446 line	
14140	CRTRAC1	NM_018058.1	1358	tccgagacaagcccgctatgtcca	140971	-	-	
14141	CNS2	NM_001891.1	350	cagagtgatcgctgctcctaatt	140977	-	enzyme_inhibitor	
14142	CSPG2	NM_004385.2	1312	aagaggctacaaccactcgatttg	140998	-	see also 2948 line	
14143	CSPG3	NM_004386.1	640	cgcgactgttcggtatccatca	141261	-	-	
14144	CUBN	NM_001081.2	2467	aagtcgcttgcggggatgaatta	141356	-	receptor_activity	Imerslund-Grasbeck syndrome(Imerslund-Grasbeck症候群)、megaloblastic anemia(巨赤芽
14145	DCSTAMP	NM_030788.2	1360	aagacggctgagctctatcttta	141606	-	-	
14146	DEF6	NM_022047.2	193	gaggaaacacttcgagatgatga	141611	-	see also 8247 line	
14147	DGKA	NM_001345.3	1441	ctgagatagggtccgattattc	141638	-	kinase_related	diacylglycerol kinase

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14148	DGKB	NM_004080.1	2040	acgaagccatc-gacgaatagaga	141713	-	kinase related	-	-
14149	DKFZp566 D234	NM_020116.2	740	tggatctgaaggagaattctatg	141772	-	-	-	-
14150	DKFZp586 G0123	NM_013386.2	1418	ttggccctcttttcgacgaattatt	141871	-	-	-	-
14151	DLK1	NM_003836.3	392	ggagacgggagagctctgtgtaga	141882	-	-	structural molecule	-
14152	DL1	NM_005618.2	2459	aggaatgagctcgctcatagaact	141904	-	signal transduction	structural molecule	-
14153	DL3	NM_016941.1	1678	ggagctctgctgtagattggaatc	141909	-	signal transduction	calcium ion binding	-
14154	DL4	NM_019074.2	2242	agggccactcggttaccacagt	141930	-	signal transduction	structural molecule	-
14155	DMP1	NM_004407.1	1552	ggatagagagccggaaattaac	141955	-	-	Integrin binding	-
14156	DNER	NM_139072.2	1477	tggagggtagacattaccctgc	141978	-	see also 9657 line	-	-
14157	DSC1	NM_004948.2	885	ttggcttatatggctatgcaaca	142010	-	-	-	-
14158	DSC2	NM_004949.2	1045	tagatcgtgagcagatgaatct	142095	-	-	-	-
14159	DSC3	NM_001941.2	314	ctgttgcgtctctgataagaaa	142157	-	-	-	-
14160	DSG1	NM_001942.1	3334	aagtatagtagcgtgcaatatag	142345	-	-	calcium ion binding	-
14161	DSG2	NM_001943.1	1195	atgttagcagagcagcatgtaga	142392	-	-	calcium ion binding	-
14162	DSG3	NM_001944.1	1608	tggttctgctcgcgtagaaacact	142491	-	see also 1239 line	-	-
14163	DSG4	NM_177986.2	3075	tagcacgactgagggttgatgg	142624	-	see also 10174 line	-	-
14164	DUOX1	NM_017434.3	652	tggctatcacgtgctttcagacc	142635	-	-	-	-
14165	DUOX2	NM_014080.3	311	ggcgtatgacggctggtttaaca	142654	-	-	-	-
14166	EDEM1	NM_014674.1	585	atgatgtactaggggaactactca	142673	-	see also 5857 line	-	-
14167	EDL3	NM_005711.3	697	aagcataccgaggagatcacatc	142723	-	-	-	-
14168	EFOP1	NM_022351.2	663	tggacaattcgttaactagattt	142773	-	see also 8342 line	-	-
14169	EFEMP2	NM_016938.1	1199	gtgcctacaatgccttctcagatc	142840	-	receptor activity	transmembrane receptor	Alzheimer disease(アルツハイマー病)
14170	EFHC1	NM_018100.1	1678	aagcactgcgtcaattcagaac	142905	-	-	-	-
14171	EGF	NM_001963.2	2374	cagtggaataaacgattgacttct	142972	-	kinase related,	growth factor	melanoma(メラノーマ)
14172	EGFL6	NM_015507.2	626	atgctaagtgtagaactctagg	143012	-	signal transduction	-	-
14173	EGFL7	NM_016215.2	613	ggggcctgtggagcagcaaatatg	143041	-	cell cycle	-	-
14174	EGFL9	NM_023932.1	717	aagacctgtgagctgtgttacc	143043	-	-	-	-
14175	ELA1	NM_001971.3	398	gagcttaccctcaatagctatg	143051	-	-	trypsin	-
14176	EML2	NM_012155.1	1744	ggggcgagggcagctgatatcaac	143075	-	-	-	-
14177	EMR1	NM_001974.3	1916	gtgtcgtcctccgaaatcaca	143124	-	see also 1257 line	-	-
14178	EMR2	NM_013447.2	2803	cagcaggctcgggagcgaatagg	143149	-	gpcr, receptor activity, signal transduction	-	-
14179	EMR3	NM_032571.2	1450	gtggggattgatcgaactgaacc	143174	-	gpcr,	-	-
14180	EP315	NM_001981.1	2699	gaggttgcgcgactaaatcacg	143254	-	receptor activity	-	-
14181	EP315R	NM_021235.1	79	caggtcgtatccggcctacacagg	143259	-	see also 1263 line	-	-
14182	ERO1L	NM_014584.1	981	ctggcctcatcgcaagcattaat	143313	-	see also 5764 line	-	-
14183	F10	NM_000504.2	244	cagcgacaagcagcaatgaattct	143339	-	translation	Stuart-Prover disease(スチュアート・プラウアー	-

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14184	F12	NM_000505.2	212	cggcagctgtaccacaatgtac	143352	-	-	trypsin	Hageman clotting factor deficiency(第XII因子欠乏症)
14185	F13A1	NM_000129.2	142	cagttccaccaataactataat	143356	-	see also 115 line	-	-
14186	F2	NM_000506.2	880	tgggtactggagcctcaactatt	143407	-	apoptosis、 cell_cycle	trypsin	disprothrombinemia or hypoprothrombinemia(低プロトロンビン血症 もしくは 高プロトロンビン血症)
14187	F7	NM_000131.2	416	aggacaccgctccagtcctatc	143421	-	-	-	atherosclerosis(粥状硬化症)、 hypoproconvertinemia(低プロコンバーチン血症)
14188	F9	NM_000133.2	782	ctgtggaggctctatcgttaatg	143452	-	-	steroid hormone receptor	hemophilia B(血友病B)
14189	FAT	NM_005245.1	12855	ggagaccgctacggcttcttgc	143860	-	-	calcium ion binding	-
14190	FAT2	NM_001447.1	8778	gggaactgtggcgcactctaaag	144085	-	-	calcium ion binding	-
14191	FBLN1	NM_001996.2	308	atgctacgggaactcaagaatgc	144140	-	-	-	-
14192	FBLN2	NM_001998.1	1692	gggctatccctgcgaatcatgtca	144174	-	see also 1279 line	-	-
14193	FBN1	NM_000138.2	6299	ttgcgaatgagctacttgttatgc	144368	-	see also 122 line	-	-
14194	FBN2	NM_001999.2	2794	ggcgcgtgtgaactagatacagc	144470	-	see also 1282 line	-	-
14195	FBN3	NM_032447.2	8641	cgcgggaacgagcgaagtgtct	144635	-	-	-	-
14196	FCN1	NM_002003.2	1014	ggcgcgaggggggtacaaatatag	144847	-	-	opsonin	-
14197	FIBL-6	NM_031935.1	11608	tcgcaggcgaatgattacagg	144998	-	-	receptor_activity	-
14198	FKBP10	NM_021939.2	1282	gggacttgttcgataccattac	145146	-	-	-	-
14199	FKBP14	NM_017946.1	318	aggacggctcttatttcaactcc	145153	-	-	-	-
14200	FKBP7	NM_016105.2	754	aagccacgtgacagtcataatca	145185	-	see also 6663 line	-	-
14201	FKBP9	NM_007270.2	666	ctggacggaactctgttgatgc	145197	-	-	-	-
14202	FLJ11767	NM_024593.2	223	ctggatgtaatgcatttcgaaa	145220	-	-	-	-
14203	FLJ12443	NM_024830.3	756	caggacctgcctaattaccctca	145231	-	-	-	-
14204	FLJ13612	NM_025202.2	686	ttgtcatcggccagtaagtgtga	145290	-	-	-	-
14205	FLJ20047	NM_017639.1	623	ttggaagcagcctgtttacattt	145304	-	-	-	-
14206	FLJ20080	NM_017657.2	2773	tggatccggggtgtgtatgagtia	145418	-	see also 7083 line	-	-
14207	FLJ20254	NM_017727.2	938	ttgcctatatgccgaacaactcc	145425	-	-	-	-
14208	FLJ20298	NM_017752.2	1685	tggctactaatcctgactattat	145479	-	-	-	-
14209	FLJ22843	NM_025184.2	1033	tggctaaccttctcgatagatat	145567	-	-	-	-
14210	FLJ23588	NM_022785.2	1779	ggggccattggccggaataattt	145689	-	-	-	-
14211	FLJ25818	NM_173503.1	1041	tggccgatgcaactgtctataaa	145852	-	-	-	-
14212	FLJ30681	NM_133459.1	314	cagcagctgcacggcacacttgg	145871	-	-	-	-
14213	FLJ31455	NM_144994.1	925	ttgatctctgtccactacttia	145899	-	see also 9747 line	-	-
14214	FLJ31614	NM_152573.2	1844	tggtagatgacaacgcgtaaatct	145939	-	signal_transduction	-	-
14215	FLJ32009	NM_152718.1	1203	tggcgccatgcgatgaatcaagg	145960	-	-	-	-
14216	FLJ34588	NM_152726.1	477	ttggccgataaaggcgtaattica	145976	-	see also 9932 line	-	-
14217	FLJ37440	NM_153214.1	545	aagtttgggaagcaagtaactagt	145994	-	-	-	-
14218	FLJ37874	NM_182603.1	953	atgagcgtgtgataatgatgaca	146018	-	-	-	-
14219	FLJ39116	NM_152635.1	1549	tcgcacggagctcctgaaatactac	146033	-	-	-	-
14220	FLJ39155	NM_152403.2	3066	tggctcgtgtgcacccagttaaagg	146093	-	see also 9854 line	-	-
14221	FLJ40342	NM_152347.3	3079	atgactaaattatccgatattatt	146184	-	-	-	-
14222	FLRT1	NM_013280.3	2333	cggcatccccgcacatagactact	146199	-	-	receptor signaling protein	-

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14223	FLRT3	NM_013281.2	1279	aggcttcgtaggagtgactattaa	146234	-	see also 5384 line	-	-
14224	FRAS1	NM_025074.2	4378	atgttcaacatcgcgctattacc	146329	-	see also 8843 line	-	-
14225	FSTL1	NM_007085.3	875	atgacctgtgacggaagaataca	146523	-	-	heparin binding	rheumatoid arthritis(関節リウマチ)
14226	GAS6	NM_000820.1	1624	tggacgctcgggactgaatacaac	146535	-	signal_transduction	-	leukemia(白血病)
14227	GSA	NM_012198.2	259	tggtagctcogtgatactact	146543	-	-	calcium ion binding	-
14228	GPD2	NM_000408.1	2214	tggagcgcggctgctatactaa	146621	-	see also 323 line	-	-
14229	GRN	NM_002087.1	1631	aggacactctgcgcataaacc	146636	-	signal_transduction	growth factor	-
14230	GUCA1B	NM_002098.2	99	cagcggcacactctttatgcag	146641	-	-	calcium sensitive guanylate cyclase activator	-
14231	HGF	NM_000801.3	1847	tagtacgattgattacctaatt	146713	-	-	-	atherosclerosis(粥状硬化症), renal cell carcinoma(腎細胞癌), multiple myeloma(多発性骨髄腫)
14232	HPCAL4	NM_016257.2	648	gagtgacccatcattgtgttc	146730	-	-	-	-
14233	HRC	NM_002152.1	1532	aagagggtccatcaaaagagatga	146736	-	see also 1383 line	-	-
14234	B	NM_013292.2	174	cagaacccgtgatgtattataga	146741	-	-	-	-
14235	IPO4	NM_024658.2	1578	ctgcgggaattccgttaacagg	146768	-	see also 8687 line	serine protease inhibitor	-
14236	ITIH1	NM_002215.1	1140	aggtttctccggggaattgaga	146790	-	-	-	-
14237	ITSN1	NM_003024.1	829	aggctcccaagcaagaactatc	146826	-	see also 2024 line	-	-
14238	ITSN2	NM_006277.1	858	aagcagctctctgattgattta	146923	-	see also 4363 line	-	-
14239	JAG1	NM_000214.1	794	ctggccgaggtctctatacgttc	147021	-	see also 162 line	-	-
14240	JAG2	NM_002226.3	1495	aggctgcgctccggttcgaatgc	147117	-	cell cycle, signal_transduction	-	-
14241	KCNIP1	NM_014592.2	790	cagcagctatgccattacctct	147137	-	channel, signal_transduction	-	-
14242	KCNIP2	NM_014591.3	603	gogtgagcagatgaattgaattg	147157	-	channel, signal_transduction	-	-
14243	KIAA0494	NM_014774.1	2439	gagctaagggtagcttaggtat	147203	-	-	-	-
14244	KIAA0676	NM_198868.1	2456	aggagtggtgctcggagctatacc	147220	-	-	-	-
14245	KIAA0980	NM_025176.3	1933	tggagacccaaggtaaatactac	147238	-	-	-	-
14246	KIP3	NM_054113.1	122	tcgtgccctcgactataccacc	147259	-	-	-	-
14247	LALBA	NM_002289.1	111	cagctgtgaaagacatagatgg	147262	-	signal_transduction, apoptosis	lactose synthase	-
14248	LDLR	NM_000527.2	798	ctgtgcgccgtgacgaattccagt	147272	-	-	-	atherosclerosis(粥状硬化症), familial hypercholesterolemia(家族性高コレステロール血症)
14249	LETM1	NM_012318.1	795	tggcttcgcctgctatagatcg	147305	-	receptor activity	Sterol regulatory element binding proteins	-
14250	LOC28609	NM_181723.1	474	cgggagagggcgatttctgttatt	147318	-	see also 5274 line	-	-
14251	LOC63928	NM_022097.1	613	tggagacccaaggaattatagaagc	147359	-	-	calcium ion binding	-
14252	LPA	NM_005577.1	11829	tcggagagatccattatactatc	147372	-	-	-	-
14253	LRP1	NM_002332.1	6547	gggtcagatccgcgtattgagc	147443	-	see also 1491 line	-	-
14254	LRP2	NM_004525.1	4899	tggccctgcggcttaacttga	147673	-	receptor_activity	receptor	-



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14255	LRP8	NM_004631.2	1584	aagaatgctggcaactagatgt	147947	-	see also 3146 line	-
14256	LTBP3	NM_021070.2	2650	ggcgaccactgcgaatactacc	147980	-	-	-
14257	MAN1B1	NM_007230.1	775	aaggataccgcaagtttgatgg	147989	-	-	-
14258	MAN1C1	NM_020379.1	891	gagctataagcgggtatgcaatgg	148007	-	-	-
14259	MASP1	NM_001879.3	138	cagatccagtcgctgctgtatcc	148029	-	-	-
14260	MASP2	NM_006610.2	403	acggggttcgagggcctctatgc	148080	-	-	-
14261	MATN2	NM_002380.2	1719	ggggaccacgggttgcaacatgc	148144	-	see also 1534 line	-
14262	MATN4	NM_003833.2	227	ttgcgctgctcagttatcaggt	148161	-	see also 2613 line	-
14263	MCFD2	NM_139279.2	430	aagatgaactgattaacataata	148172	-	-	-
14264	MCSC	NM_052901.1	1273	atgcaggcgcgaagcctctattga	148184	-	-	-
14265	MGC11256	NM_024324.2	797	cagcgtgcgacgttctgtaaga	148189	-	-	-
14266	MGC12458	NM_032328.1	106	ttgaccatgagtggaataataca	148196	-	see also 9164 line	-
14267	MGC2615	NM_024103.1	1403	tggcctcgggtaccatattccagc	148226	-	-	-
14268	MGC26610	NM_144647.2	280	atgatgacgataataatgaac	148232	-	see also 9724 line	-
14269	MGC39650	NM_152465.1	204	aggacgagctcaccaattgaag	148246	-	-	-
14270	MGC39821	NM_182576.1	627	cagcgtgatgacccgaatgaag	148258	-	-	-
14271	MGC4170	NM_024312.3	1592	cagtgaggagctgctctatttg	148318	-	-	-
14272	MGC4266	NM_032680.2	916	ggcgacatggcggaagatgagg	148388	-	-	-
14273	MGC4342	NM_024329.3	326	aagatgtcaagcagtgatgagc	148397	-	-	-
14274	MGP	NM_000900.1	282	gcgaacgctacgccatggttat	148425	-	-	-
14275	MLC1SA	NM_002475.2	214	aagtggtgatcgagtttaacaag	148429	-	-	-
14276	MMP1	NM_002421.2	760	ctgatctggggcttgatgtac	148443	-	see also 1563 line	-
14277	MMP11	NM_005940.2	773	agggcgcttcaacacccatattag	148464	-	-	-
14278	MMP12	NM_002426.1	881	ctgtcactaccgtgggaataaag	148494	-	-	-
14279	MMP13	NM_002427.2	144	cagagcgctactcagatcctaac	148508	-	-	-
14280	MMP2	NM_004530.1	1987	gcgagtgagtcgccccttaact	148567	-	see also 1564 line	-
14281	MMP3	NM_002422.2	1085	atgcgcgcatatgaagttactagc	148581	-	see also 3086 line	-
14282	MMP7	NM_002423.2	370	tggctcactacagggatcgtatca	148599	-	-	-
14283	MMP8	NM_002424.1	1184	cagcagcgctcgaagcaatgagc	148631	-	-	-
14284	MRC1	NM_002438.1	1419	atgggacccctgtaacggttacc	148672	-	see also 1570 line	-
14285	MUGDHL	NM_017717.3	1510	tcggccatcacatcatgaattac	148763	-	-	-
14286	MYL2	NM_000432.1	245	aggctccgggtccaataacttt	148778	-	-	-
14287	MYL2PL	NM_138403.3	497	tcgcaactgaagggaaggtttc	148792	-	-	-
14288	NELL1	NM_006157.1	736	atgccgaatggatatataacaca	148808	-	-	-
14289	NELL2	NM_006159.1	1960	ttggatggcgggatatgatgtgoc	148904	-	see also 4261 line	-
14290						-	-	-
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14290	NID	NM_002508.1	2202	cggcgacacctgctgatattg	148951	-	-	extracellular matrix structural constituent	-
14291	NIN	NM_016350.3	5609	cagagtcgagcttaagtcaca	149090	-	see also 6829 line	-	-
14292	NKD1	NM_033119.3	809	gagagcgtccttgaatcagg	149108	-	see also 9369 line	-	-
14293	NOTCH1	NM_017617.2	2423	acgacgtgcgggacaaagtc	149122	-	receptor activity, transcription, regulation	translation regulator	leukemia(白血病)
14294	NOTCH2	NM_024408.2	6041	ctgattgcacccagagtaactga	149218	-	see also 8617 line	-	-
14295	NOTCH3	NM_000435.1	3538	gggggtgctctgcgagattaatga	149258	-	see also 344 line	-	-
14296	NOTCH4	NM_004557.2	5905	tggcccaacccctcgagataatgc	149285	-	see also 3101 line	-	-
14297	NOX5	NM_024505.2	1660	tagacctggtgactactgtatc	149294	-	channel, apoptosis	-	-
14298	OAZ2	NM_002537.1	407	caggacctccctgtgaatgatgg	149309	-	see also 1632 line	-	-
14299	PAD11	NM_013358.1	323	gggcacagccagtaaggattaa	149319	-	see also 5408 line	-	-
14300	PAD12	NM_007365.1	338	aaggtcacctgcaactactatga	149336	-	-	protein-arginine deiminase	-
14301	PAD13	NM_016233.1	111	ggagacctcgtggacattatgg	149344	-	-	protein-arginine deiminase	-
14302	PAD14	NM_012387.1	1396	aggccctctggaagctctattot	149372	-	-	protein-arginine deiminase	-
14303	PATE	NM_138294.1	256	gggatggaatccctggtaacc	149380	-	-	-	-
14304	PC-LKC	NM_017675.2	2373	caggggggtggagaccatagtaga	149406	-	-	-	-
14305	PCDH10	NM_020815.1	2685	tcgtcgctggcaacgaataaagac	149444	-	see also 7982 line	-	-
14306	PCDH12	NM_016580.2	2127	ctgcgtgacctctagactatga	149485	-	see also 6923 line	-	-
14307	PCDH15	NM_033056.2	4091	ggcgccgaagccgagtagctcgc	149639	-	-	calcium ion binding	-
14308	PCDH16	NM_003737.1	3022	caggccatgtacgctcttagagg	149717	-	-	calcium ion binding	-
14309	PCDH17	NM_014459.2	2103	aagtgctgcgcatcaagattct	149768	-	-	-	-
14310	PCDH18	NM_019035.2	2595	cagggtggccgaatcaactacc	149839	-	see also 7669 line	-	-
14311	PCDH20	NM_022843.2	789	gagccaccccccctacctaatgtg	149872	-	see also 8494 line	-	-
14312	PCDH7	NM_002589.2	3940	ggcgatatacaggtccgttaagg	149957	-	see also 1669 line	-	-
14313	PCDH9	NM_020403.2	3155	tcgcagcgcgctgtacgtttca	150083	-	-	-	-
14314	PCDHA5	NM_018908.2	765	aagtgagacattagttattaaac	150103	-	-	-	-
14315	PCDHB1	NM_013340.2	1395	gtgctaataatccgacagttatga	150158	-	-	-	-
14316	PCDHB10	NM_018930.2	2299	aagttctgaaaccagttatttc	150209	-	-	calcium ion binding	-
14317	PCDHB11	NM_018931.2	1126	gggacacacggaagaattgttg	150217	-	-	calcium-dependent cell adhesion molecule	-
14318	PCDHB12	NM_018932.2	457	ttgcttgaagtgcaaggattt	150221	-	-	calcium-dependent cell adhesion molecule	melanoma(メラノーマ)
14319	PCDHB13	NM_018933.2	1464	tggggaccctctatgctgataaca	150231	-	-	calcium ion binding	-

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14320	PCDHB14	NM_018934.2	1039	gtgaccatctgctcgattacaaa	150265	-	-	calcium-dependent cell adhesion molecule	-
14321	PCDHB15	NM_018935.2	238	cagacoggcagtgattataaa	150280	-	-	calcium ion binding	-
14322	PCDHB16	NM_020957.1	2002	cagccttcggaggatatagtaa	150327	-	-	calcium-dependent cell adhesion molecule	melanoma(メラノーマ)
14323	PCDHB2	NM_018936.2	696	cagtcctgatggcataattac	150349	-	-	calcium-dependent cell adhesion molecule	-
14324	PCDHB3	NM_018937.2	757	gagaatacccccggttaactctgt	150380	-	-	calcium-dependent cell adhesion molecule	-
14325	PCDHB4	NM_018938.2	666	tggcacggtcatggttcgaatcc	150402	-	-	calcium-dependent cell adhesion molecule	-
14326	PCDHB5	NM_015669.2	1042	gagtagcctatgctctattcc	150443	-	-	calcium-dependent cell adhesion molecule	-
14327	PCDHB6	NM_018939.2	75	gggttctgaatgatttcagttatt	150456	-	-	calcium-dependent cell adhesion molecule	-
14328	PCDHB7	NM_018940.2	294	gagagcactttttaccact	150479	-	-	calcium ion binding	-
14329	PCDHB8	NM_019120.2	944	ctgaggacagtcctaataagcttc	150510	-	-	calcium ion binding	-
14330	PCDHB9	NM_019119.3	767	cagtaggtgccttattgttaa	150520	-	-	calcium-dependent cell adhesion molecule	-
14331	PCD6	NM_013232.2	569	ctgcagaggttgacgatatatt	150592	-	-	apoptosis	-
14332	PEF	NM_012392.1	596	ggacccgtcgggtccattagc	150606	-	-	see also 5308 line	-
14333	PH-4	NM_017732.2	869	ctgcctactgaagagtgatgaaga	150610	-	-	-	-
14334	PITPNM2	NM_020845.1	518	ctgtcccccacacagagataaag	150626	-	-	see also 7992 line	-
14335	PITPNM3	NM_031220.1	2227	cagtgctgcatacacatacaatg	150648	-	-	kinase-related	-
14336	PKD1-like	NM_024874.3	3004	gagtgagagcgtgttatgttat	150709	-	-	see also 8799 line	-
14337	PKD2L1	NM_016112.2	2549	agagtagtgcctccagattgatg	150750	-	-	see also 6669 line	-
14338	PKD2L2	NM_014386.1	258	aagtcattgcagcataactga	150758	-	-	channel	-
14339	PKDREJ	NM_006071.1	1452	ttgtgcaagcgtgatttctata	150835	-	-	channel, signal_transduction	-
14340	PLA2G10	NM_003561.1	791	gtgcggaccggcagagacaaaat	150996	-	-	calcium-independent cytosolic phospholipase A2	-

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14341	PLA2G1B	NM_000928.2	204	aggcaccocccgtggatgaactgg	151003	-	signal transduction	calcium-independent cytosolic phospholipase A2	-
14342	PLA2G2A	NM_000300.2	375	aaggaaagccgcactcaagtattgg	151011	-	-	calcium-independent cytosolic phospholipase A2	rheumatoid arthritis(関節リウマチ)、ApcMin-induced intestinal neoplasia(生殖腸管癌)
14343	PLA2G2E	NM_014589.1	418	gggcacactacaaccgcaaatatg	151022	-	-	calcium-independent cytosolic phospholipase A2	-
14344	PLA2G2F	NM_022819.1	390	cagtggcttctcaatgtctat	151029	-	-	calcium-independent cytosolic phospholipase A2	-
14345	PLA2G3	NM_015715.1	1181	aaggggccaccacatcagaaagg	151032	-	-	calcium-independent cytosolic phospholipase A2	-
14346	PLA2G5	NM_000929.1	375	tgcacacagctctacaataaata	151038	-	-	calcium-independent cytosolic phospholipase A2	-
14347	PLCD1	NM_006225.1	398	aaggaccagcgaatacactaga	151040	-	-	calcium-independent cytosolic phospholipase A2	atherosclerosis(粥状硬化症)
14348	PLCD3	NM_133373.1	1271	aggagggagcccgctcatctatc	151056	-	-	signal transducer	Alzheimer disease(アルツハイマー病)
14349	PLCD4	NM_032726.2	1146	gggcagcgtcgaggatataac	151078	-	-	-	-
14350	PLCG1	NM_002660.2	616	tgggaatcgtgaggatcgtatat	151112	-	-	receptor signaling protein	-
14351	PLCG2	NM_002661.1	1769	ggggacgagtgccgaggaagtgc	151187	-	see also 1741 line	-	-
14352	PLCZ1	NM_033123.2	603	atggattcacgtgaatgtctact	151225	-	see also 9370 line	-	-
14353	PLEK	NM_002664.1	101	aggagagcgtttcaatacagtg	151280	-	see also 1744 line	-	-
14354	PLG	NM_000301.1	2135	ctgaccggaccgaagtgttcac	151313	-	-	trypsin	-
14355	PLSCR1	NM_021105.1	693	ctgattcgtatcccgaaattgc	151321	-	-	phospholipid scramblase	-
14356	PLSCR2	NM_020359.1	360	ctgtccgcccagattggaatac	151324	-	-	phospholipid scramblase	-
14357	PLSCR3	NM_020360.2	877	aggtgaagactcgggaatgaatcc	151341	-	-	phospholipid scramblase	-
14358	PLSCR4	NM_020353.1	685	tgtatggcccgagaataatcatga	151353	-	see also 7843 line	-	-
14359	PPEF1	NM_006240.2	1288	ctggtcccaatcaggtacaaatag	151385	-	phosphatase	-	-
14360	PPEF2	NM_006239.2	2409	cagctctcaatgaatgaatgaca	151476	-	see also 4325 line	-	-
14361	PPLN1	NM_016488.3	161	atggctacaatagactagtaaat	151495	-	-	-	-

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14362	PPM2C	NM_018444.1	1438	agtaacttaccaccgattaagg	151560	-	phosphatase	pyruvate dehydrogenase (lipoamide) regulator	-
14363	PPP2R3A	NM_002718.3	3300	ctgatacagacctctatacagc	151672	-	phosphatase	protein phosphatase type	-
14364	PR48	NM_013239.2	1141	acgtcatctactgcaagtcttgg	151691	-	phosphatase, cell_cycle	protein phosphatase type	-
14365	PRKCSH	NM_002743.1	376	tggctataagccctgtatctcc	151696	-	kinase, related	molecular_function unknown	-
14366	PROC	NM_000312.1	619	gtgtaoaccccgagtgagttcc	151704	-	apoptosis	Smad3/Sp-1 heterodimer	thrombophilia(血栓症)
14367	PROM2	NM_144707.1	1429	gtgctcgtgtctctattctgg	151713	-	-	-	-
14368	PROS1	NM_000313.1	261	aagcgtcgtgcaaatcttact	151720	-	-	endopeptidase inhibitor	thromboembolic disease(血栓塞症)、protein S deficiency(プロテインS欠損症)
14369	PRRG1	NM_000950.1	617	atgtagttggcgctcagattcc	151791	-	-	calcium ion binding	-
14370	PVALB	NM_002854.1	283	ggagacctgtctgctaaagaaacc	151794	-	-	calcium ion binding	-
14371	Rab11- FIP3	NM_014700.1	737	cagaaactcgaccctgtgtctcc	151795	-	-	calcium ion binding	-
14372	FIP4	NM_032932.2	1027	cagcgaattgctagatgttact	151807	-	-	-	-
14373	RASGRP1	NM_005739.2	1135	tggagagtgacacgactcaaga	151838	-	signal_transduction	-	-
14374	RASGRP2	NM_005825.2	1452	acgggtgtctgtgctcagatca	151873	-	see also 4061 line	-	-
14375	RASGRP3	NM_015376.1	1657	aagatcagagtgagcctaattagt	151915	-	-	-	-
14376	RCN1	NM_002901.1	499	aggaaaccccgagagtttctatg	151929	-	-	calcium ion binding	-
14377	RCN3	NM_020650.2	567	ggagcagcgtcccccatgatgacg	151932	-	-	-	-
14378	RCV1	NM_002903.1	390	atgttttcgcagcttcgattcc	151940	-	signal_transduction	calcium sensitive guanylate cyclase activator	-
14379	REPS1	NM_031922.2	1001	agggatcgtgaagccatgatcag	151950	-	see also 9053 line	-	-
14380	REPS2	NM_004726.1	1015	cagcgcgagtagctatgcaatca	152009	-	-	-	-
14381	RGN	NM_004683.3	265	aggtttgcgggtgggtattcattc	152030	-	see also 3211 line	-	-
14382	RHBDL1	NM_003961.1	37	gtggaagacgggggaacaaactga	152044	-	signal_transduction	serine-type endopeptidase	-
14383	RHBDL4	NM_138328.1	401	ggagcctctcgagcgacttatcc	152051	-	see also 9598 line	-	-
14384	RYR3	NM_001036.2	1964	cagacacgactgattaacagatgt	152102	-	receptor_activity, channel	receptor	-
14385	S100A11	NM_005620.1	330	cagtgatggctcagctagattct	152363	-	-	calcium ion binding	-
14386	S100A12	NM_005621.1	245	agggcctgagctctaatacagatg	152370	-	-	calcium ion binding	-
14387	S100A14	NM_020672.1	165	ggagacctcatcagaagaacttca	152372	-	-	-	-
14388	S100A16	NM_080388.1	303	cagaacctggatggccaactatga	152373	-	-	calcium ion binding	-
14389	S100A5	NM_002962.1	432	cagcatcagatgacttgatgaaga	152377	-	-	calcium ion binding	-
14390	S100A8	NM_002964.3	207	cagagctgtggttcaaaagagttg	152381	-	-	calcium ion binding	rheumatoid arthritis(関節リウマチ)

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14391	S100A9	NM_002965.2	61	tcgagctgggaacgcacacataga	152384	-	-	translation	-
14392	S100Z	NM_130772.1	480	aggaaacccagttgttgataag	152388	-	-	calcium ion binding	-
14393	SCG2	NM_003469.2	1614	tgccagagatcgtgtaaatac	152416	-	-	calcium ion binding	-
14394	SCGN	NM_006998.2	396	tgtgtgcattcggatgaagagc	152428	-	-	calcium ion binding	-
14395	SCN10A	NM_006514.1	3959	tgtacatttgcgtatgtaat	152517	-	see also 4556 line		
14396	SCN1A	NM_006920.2	2534	ctgtctccgttcatttcgattg	152567	-	channel	voltage-gated sodium channel	epilepsy(てんかん), myoclonic epilepsy(ミオクローヌスてんかん)
14397	SCN2A2	NM_021007.1	6013	acgtctccaccctcgtatgatg	152691	-	channel	voltage-gated sodium channel	Seizures, afebrile(無熱性発作), benign familial seizures(-)
14398	SCN3A	NM_006922.2	2326	gagcgagcgaacagtaacgttag	152708	-	channel	voltage-gated sodium channel	-
14399	SCN4A	NM_000334.3	620	ctgtgtgcagacttcacattcc	152758	-	channel	voltage-gated sodium channel	adynamia episodica hereditaria(遺伝性稀間性無力症), hyperkalemic periodic paralysis(高カリウム血性周期性四肢麻痺), paramyotonia congenita(先天性パラミオトニア)
14400	SCN9A	NM_002977.1	4187	atgtcggacttggtaacctatct	152867	-	channel	-	-
14401	SCUBE1	NM_173050.1	623	ctgcacactaacctgttaattatg	152887	-	see also 10047 line	-	-
14402	SCUBE2	NM_020974.1	2000	tgcgaggctgggacctattatg	152930	-	see also 8059 line	-	-
14403	SEPN1	NM_020451.1	297	ctgaacgggagatatgtacatcagc	152955	-	-	selenium binding	rigid spine muscular dystrophy(脊椎硬直筋ジストロフィー)
14404	SLC25A12	NM_003705.2	701	tgttctgaagatatatagcaact	152990	-	see also 2527 line	-	-
14405	SLC25A13	NM_014251.1	256	ttgtactcgtacttgtaacatt	153030	-	see also 5556 line	-	-
14406	SMOC1	NM_022137.2	607	gtggcagagatggctccttacc	153075	-	see also 8301 line	-	-
14407	SMOC2	NM_022138.1	876	aggtcagagacgcggaatgga	153103	-	-	-	-
14408	SPARCL1	NM_004684.2	1768	ctgtactctatcgtactactaaat	153141	-	-	-	-
14409	SPOCK3	NM_016950.1	681	cagataagcccccacagtcacagc	153170	-	see also 6979 line	-	-
14410	SRI	NM_003130.2	274	tgcgcggttatgttttcaatgc	153194	-	-	receptor binding	multidrug-resistance complex(多剤耐性)
14411	SSR1	NM_003144.2	602	tggcgggacgacacatttggttg	153221	-	see also 2125 line	-	-
14412	SSR4	NM_006280.1	345	caggcacctatgaggttagattc	153240	-	-	calcium ion binding	-
14413	STAB1	NM_015136.1	7106	tggatgatgagctcacgtataag	153306	-	-	-	-
14414	STAB2	NM_017584.8	440	cggatgcgcgccattttgtagg	153314	-	-	-	-
14415	SWAP70	NM_015055.1	1686	gtggcccatcatgaaggattaat	153511	-	see also 6214 line	-	-
14416	SYP	NM_003179.1	446	tgccttcattggcgtatgtagc	153523	-	-	transporter	renal cell carcinoma(腎臓癌)
14417	TGM1	NM_000359.1	395	cagagagggcatgctagtagtga	153525	-	-	AP-1(jun-D/c-fos heterodimer)	ichthyosiform erythroderma(性魚鱗癬様紅皮症), ichthyosis congenita(先天性魚鱗癬)
14418	TGM2	NM_004613.2	985	cgcgcgtgtgcccactacaact	153560	-	-	protein-glutamine gamma-glutamyltransferase	Alzheimer disease(アルツハイマー病), Parkinson disease(パーキンソン病)
14419	TGM3	NM_003245.2	1695	aagatctcgtacgcctcagtaga	153596	-	see also 2187 line	protein-glutamine gamma-glutamyltransferase	-
14420	TGM4	NM_003241.1	2015	tggacccaagaatttatcgtca	153647	-	-	-	-
14421	TGM5	NM_004245.1	1622	aagcatcacgattaatgttctag	153665	-	see also 2849 line	glutamyltransferase	prostate cancer(前立腺癌)

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14422	TGM7	NM_052955.1	483	gagtatcatcgcgagattatgg	153680	-	-	protein-glutamine gamma-glutamyltransferase	-
14423	THBD	NM_000361.2	489	gggttaccggagacacacacacc	153705	-	receptor activity	transmembrane	-
14424	THBS1	NM_003246.2	1764	aaggactcgttggtgatgaac	153728	-	see also 2188 line	receptor	-
14425	THBS2	NM_003247.2	3562	aggactacacggcctataggtgg	153790	-	-	structural molecule	colorectal cancer(大腸癌), lung cancer(肺癌)、 colorectal cancers(結腸直腸癌)
14426	THBS3	NM_007112.3	181	ctgggacatctactctatctcc	153798	-	-	structural molecule	-
14427	THBS4	NM_003248.3	1727	cagttaccccgacgaagaactgc	153860	-	-	structural molecule	-
14428	TKT	NM_001064.1	1373	tggaaactagcccgccaatacaaaag	153895	-	see also 652 line	-	-
14429	TKTL1	NM_012253.1	890	atggtgacaccagggtactctact	153905	-	-	transketolase	-
14430	TLL1	NM_012464.3	3303	gggtgtggcggacgattgaagc	154004	-	see also 5339 line	-	-
14431	TMG3	NM_024082.2	613	cagagctcaagatgcgatgtatgt	154060	-	-	calcium ion binding	-
14432	TNNC1	NM_003280.1	479	atgagttcctggagttcagaag	154067	-	see also 2219 line	-	-
14433	TNNC2	NM_003279.2	457	ggagtcgaatctctgatgaaga	154069	-	-	calcium ion binding	-
14434	TPO	NM_000547.3	421	cagcatcaaacggatgctttatc	154071	-	-	-	thyroid cancer(甲状腺癌), thyroid hormone organification defect IIA(甲状腺ホルモンの 有機化障害), iodide organification defect(ヨウ化物 ヨード有機化障害)
14435	TRPA1	NM_007332.1	2124	ctgcggagactattatctcgagt	154158	-	see also 5080 line	-	-
14436	TSC	NM_017899.1	283	ggcagctccatccatcgagatttaa	154217	-	-	-	-
14437	UCO1	NM_017549.1	825	aggaagtgtcgagacagaaagtca	154234	-	see also 7030 line	-	-
14438	UMOD	NM_003361.1	1010	tagacaggagactgcgaatcgaat	154243	-	-	calcium ion binding	-
14439	USP13	NM_003940.1	2336	caggcaactacgagcaacgaataa	154315	-	-	ubiquitin-specific protease	-
14440	USP32	NM_032582.2	839	ttggtttcaccacctattctgcc	154348	-	-	-	-
14441	ACE	NM_000789.2	2342	atggccacgctcccggaataatga	154420	-	see also 488 line	-	-
14442	ACE2	NM_021804.1	2219	atgtccggagccgctatcaatga	154534	-	see also 8170 line	-	-
14443	ADAM12	NM_003474.2	2235	ctgcctgaatgctcaatgcaaa	154651	-	-	-	-
14444	ADAM15	NM_003815.2	1266	tggctgctttctgcggaaatag	154677	-	-	zinc binding	-
14445	ADAM17	NM_003183.3	276	tgtctcagactagatattct	154687	-	-	-	osteoarthritis(変形性関節症)
14446	ADAM19	NM_023038.2	763	ggagatgcgaactatgtgataa	154766	-	-	-	-
14447	ADAM20	NM_003814.3	816	tggctgtgataatattagatat	154802	-	-	zinc binding	-
14448	ADAM21	NM_003813.2	388	ggggccttgcggagattataa	154852	-	-	zinc binding	-
14449	ADAM28	NM_014265.1	1025	cagcgataatcttctagagtg	154928	-	-	zinc binding	-
14450	ADAM30	NM_021794.2	882	atgttctatgaggtacactta	154997	-	-	zinc binding	-
14451	ADAM33	NM_025220.2	1569	ctgtcccccagacgtttacactac	155062	-	see also 8882 line	-	-
14452	ADAM8	NM_001109.1	1816	caggacttacacgtttacagatc	155070	-	-	zinc binding	-
14453	ADAM9	NM_003816.1	1055	acgcaggcgggaataatgtgtt	155100	-	kinase related	-	-
14454	ADAMDEC1	NM_014479.2	634	aaggcccaattcgaatctctaga	155153	-	see also 5700 line	-	-
14455	ADAMTS1	NM_006988.2	2339	tgggtgatgcacatcagat	155213	-	see also 4880 line	-	-
14456	ADAMTS1	NM_030957.1	1242	gagaacgctgtgcttaaccatga	155245	-	-	zinc binding	-

14457	ADAMTS1	NM_030955.1	489	gtgggtccagtcctcagtagatgc	155259	-	-	zinc binding	-	Schulman-Upshaw syndrome(Schulman-Upshaw症候群), thrombotic thrombocytopenic purpura(血栓性血小板減少性紫斑病)
14458	ADAMTS1									
14459	ADAMTS1	NM_139025.1	2136	tggcagagcggagagaatatgtoa	155338	-	signal_transduction	-		
14460	ADAMTS1	NM_139055.1	292	ctgcagcgtctcttctattctgg	155356	-	-	-		
14461	ADAMTS1	NM_139057.1	977	ggatacctcggcaataaccagg	155375	-	-	-		
14462	ADAMTS1	NM_133638.1	2467	aagcggcacatagctatttagc	155469	-	-	-		
14463	ADAMTS3	NM_014243.1	2354	aagtcggagaccttcagatct	155557	-	-	zinc binding	-	
14464	ADAMTS4	NM_005099.2	851	ctgttagcgtgttacaatatcg	155593	-	see also 3577 line	-		
14465	ADAMTS5	NM_007038.1	1264	tggcagacgttgggacacatatgt	155605	-	see also 4924 line	-		
14466	ADAMTS6	NM_014273.2	434	aagatcaacgttagtacaactaaa	155663	-	-	zinc binding	-	
14467	ADAMTS8	NM_007037.2	1453	ctgtggcagcccggaatctacaag	155732	-	-	zinc binding	-	
14468	ADAMTS9	NM_020249.2	242	aagaacgcgacggaggaattaact	155755	-	-	-		
14469	ADH1A	NM_000667.2	1172	aagatcctgaccattctgtatgt	155903	-	-	zinc binding	-	
14470	ADH1C	NM_000669.2	1155	ctgcttcctcttggaagagatgt	155908	-	-	RXR alpha/RXR	-	
14471	ADH4	NM_000670.2	1146	cagaatcatagtttgacaatca	155924	-	-	alpha heterodimer	-	
14472	ADH6	NM_000672.2	583	tcgctcctctagagaaagtatgc	155955	-	-	zinc binding	-	alcoholism(アルコール依存症)
14473	ADH7	NM_000673.2	183	aagttgccccaccacaagactaaa	155969	-	transcription_regulat	-		
14474	AICDA	NM_020661.1	213	ttggttatcttcgcaataagaac	155991	-	or	zinc binding	-	
14475	ANPEP	NM_001150.1	321	aagtaaaagctgggaactcgttaac	156005	-	receptor_activity	-		
14476	APOBEC3	NM_021822.1	401	aggttatcccgaaacttaagtac	156035	-	-	zinc binding	-	
14477	ARTS-1	NM_016442.2	1023	ctgctattcccgactttcagct	156072	-	see also 6859 line	-		
14478	BSPRY	NM_017688.1	952	tggccgatcagacacattctatc	156120	-	-	-		
14479	CA1	NM_001738.1	766	gtgtaacttgatcatctctgaag	156134	-	-	translation	-	
14480	CA10	NM_020178.2	1156	atgagctatatacgaatgtcaca	156147	-	-	zinc binding	-	
14481	CA11	NM_001217.2	787	cggagccgctcgggaacatcaga	156166	-	-	zinc binding	-	
14482	CA12	NM_001218.2	750	cggagagagaccgtgaatatattac	156176	-	-	zinc binding	-	
14483	CA14	NM_012113.1	1148	aagcaggatcctcgtataccaca	156187	-	-	zinc binding	-	
14484	CA2					-	-	-	-	osteopetrosis(大理石骨病), osteopetrosis with renal tubular acidosis(腎尿細管性アシドーシスにともなう大理石骨病)
14485	CA3	NM_000067.1	77	ctgggggtacggcaaacacacacg	156189	-	-	zinc binding	-	
14486	CA4	NM_005181.2	873	aagaactgccaggttatttga	156208	-	-	zinc binding	-	
14487	CA5A	NM_000717.2	873	tggggcagccgacgggtgataaag	156231	-	-	zinc binding	-	
14488	CA5B	NM_001739.1	172	gtgcatggcaaacacgaataac	156234	-	-	zinc binding	-	
14489	CA6	NM_007220.2	206	cagctctactacttactactaca	156241	-	see also 5033 line	-		
14490	CA8	NM_001215.1	235	ggattcccatgtgtcaacattgg	156258	-	-	zinc binding	-	
14491	CA9	NM_004056.3	628	ctggcacacaggttaatttcaaa	156286	-	see also 2733 line	-		
14492	CDAC1	NM_001216.1	1167	ccgagcagcagcagccttgaatg	156305	-	-	zinc binding	-	renal cell carcinoma(腎細胞癌)
14493	CGI-63	NM_001785.1	356	agatttcaggggcaattgtctatc	156310	-	-	zinc binding	-	
14494	CRIP2	NM_030911.1	554	tgtctacggaggtcttctagtc	156329	-	-	kinase related	-	
14495		NM_016011.1	647	gggcctagaagaccatcattgtg	156359	-	-	receptor_activity	-	
14496		NM_001312.2	90	gtcgacaaagaccgtgtactctg	156384	-	-	zinc binding	-	



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14495	CRYZ	NM_001899.2	879	atggcaagagagtcgagtataat	156374	-	-	zinc binding	-
14496	CSRPI	NM_004078.1	90	gtgtgaagaacaggttactttg	156402	-	-	zinc binding	-
14497	DCTD	NM_001921.1	448	gtgacattccggaaattcatacc	156421	-	-	zinc binding	-
14498	DKFZP547 N043	NM_032018.2	607	atgtcaaacagagctactaacagg	156444	-	-	-	-
14499	DPF3	NM_012074.1	630	aagcaaacagtgctgatataggaaa	156471	-	transcription_regulat or	-	-
14500	DUSP12	NM_007240.1	368	cagtgcgaagtgtgcccataataa	156475	-	phosphatase	zinc binding	-
14501	ECE1	NM_001397.1	525	ggaaaggcgcaagtatactacc	156499	-	-	zinc binding	-
14502	ECEL1	NM_004826.1	2147	gagtgcatcgctccgtctctatga	156536	-	see also 3348 line	-	-
14503	EEA1	NM_003566.1	3913	tagtcaacggagaggttagtgagc	156630	-	-	-	-
14504	ENPEP	NM_001977.2	1192	aagcacacagcgcaaatgtgctgc	156661	-	see also 1259 line	-	-
14505	FASN	NM_004104.3	2312	acgtctccgcgcgagtagcaaatgt	156723	-	-	Sterol regulatory element binding proteins	-
14506	FBXO30	NM_032145.3	1827	aggtcccttagcttaactatgg	156778	-	-	-	-
14507	FGD2	NM_173558.2	1092	ggctctcagagacacacatatag	156829	-	-	-	-
14508	FGD3	NM_033086.1	621	ggggacggctctccagacatatgg	156836	-	-	-	faciogenital dysplasia(顔面性器形成不全)
14509	FGD4	NM_139241.1	1493	atgctcttaaggactatataag	156869	-	see also 9676 line	-	-
14510	FLJ10759	NM_018207.1	1015	ggagcaaacctcacatatgaaga	156895	-	-	-	-
14511	FLJ23049	NM_024687.1	1084	cagaccatagcttaagtgaat	156928	-	-	-	-
14512	FLJ32919	NM_144588.3	563	ctgagtcggaggaaagatcatatg	156944	-	-	-	-
14513	FLJ40722	NM_173678.1	1308	cgcgaaggcgctctcctaattcc	156955	-	-	-	-
14514	FYCO1	NM_024513.1	4131	atgcggctgaacaggactactaca	156990	-	-	-	-
14515	GDA	NM_004293.1	267	gtgctcaagcgtgtgaaataa	157002	-	see also 2875 line	-	-
14516	HGS	NM_004712.3	1048	ctgagctcgacggtagtctcaac	157050	-	kinase_related, signal_transduction	-	-
14517	HS3ST1	NM_005114.1	1014	ttgttgcaagaacattgactgg	157065	-	-	-	-
14518	1	NM_017523.2	1068	ctgcgcgtcctaaatcaacatca	157083	-	-	-	-
14519	KEL	NM_000420.2	1746	cgggtccctccgagctagaattg	157107	-	-	zinc binding	-
14520	KIAA1576	NM_020927.1	437	ggggacagcgtgaaaggatatga	157128	-	-	-	-
14521	KPNB1	NM_002265.4	2792	ctggactaataagggaacttatgt	157201	-	see also 1451 line	-	-
14522	KUB3	NM_033276.1	501	aggttcgagctgctaaccttagt	157222	-	kinase related	-	-
14523	LAP3	NM_015907.1	1106	gaggagctgcaactatatgctca	157238	-	-	zinc binding	-
14524	MLN	NM_033029.1	1003	atgggatgttcgagataataaga	157260	-	-	-	-
14525	LNPEP	NM_005575.1	816	tagcaggcacaattatacgttg	157297	-	see also 3877 line	-	-
14526	LOC51321	NM_016627.1	693	cagatgggtgggagatttcagc	157359	-	see also 6962 line	-	-
14527	LOC51725	NM_016298.1	1057	atggcggatgctgatacacttt	157389	-	-	-	-
14528	LAP	NM_022350.1	2006	tggttactacatcgttcactatg	157470	-	-	-	-
14529	LTA4H	NM_000895.1	316	aggatgccaatggaaatctct	157501	-	see also 582 line	-	-
14530	LTB4DH	NM_012212.2	145	tggctatcctactaatagtgaact	157552	-	see also 5200 line	-	-
14531	MADHIP	NM_004799.1	578	ttgttgacgcgtatgcataaac	157584	-	receptor activity	-	-
14532	MBTPS2	NM_015884.1	1312	cagattgatatttatcagtagg	157725	-	see also 6557 line	-	-

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14533	MEP1A	NM_005588.1	514	aggacgaccgggagatgattgt	157736	-	-	zinc binding	-
14534	MEP1B	NM_005925.1	541	gggtctgaaccggagatgactatg	157787	-	see also 4142 line	-	-
14535	MGC16186	NM_032372.2	444	cagtgaaccaatagaataactgg	157842	-	-	-	-
14536	MGC45594	NM_175907.2	827	ctgtgatcgctctatcaactata	157856	-	see also 10157 line	-	-
14537	MID2	NM_012216.2	1371	ctgtatagaaggtagattattt	157901	-	see also 5209 line	-	-
14538	MIPEP	NM_005932.1	984	agggtctctccaagggaacgatgc	157951	-	see also 4143 line	-	-
14539	MIRAB13	NM_033386.1	904	ccgggtctctggcaaacactacagg	157985	-	transcription_regulat	-	-
14540	MME	NM_000902.2	361	gcggaggctggttgaaacgtaat	157997	-	see also 586 line	-	-
14541	MMEL2	NM_033467.1	1334	ggaggcgctggcggtgaattgt	158078	-	-	-	-
14542	MMP10	NM_002425.1	1427	aagagtaacacgtagttaacttg	158109	-	-	zinc binding	-
14543	MMP14	NM_004995.2	1459	gggtgcctaccgacaaagattga	158118	-	see also 3488 line	-	-
14544	MMP15	NM_002428.1	394	cagttcggggtacagtgaaagc	158125	-	see also 1565 line	-	-
14545	MMP16	NM_005941.2	214	ctcgggaacggagagattttca	158139	-	see also 4147 line	-	-
14546	MMP17	NM_016155.2	572	cggtgcgtgacctatgtactac	158206	-	-	zinc binding	-
14547	MMP19	NM_002429.2	1175	aggtgtggcgctacattatttc	158233	-	-	-	-
14548	MMP20	NM_004771.2	499	aggagaagcgagatatttatat	158259	-	see also 3283 line	-	-
14549	MMP21	NM_147191.1	1673	atgtttgtgacctcatatctcc	158316	-	see also 9814 line	-	-
14550	MMP24	NM_006690.2	1307	ggggcgatgggagattgttttc	158330	-	see also 4723 line	-	-
14551	MMP25	NM_022468.3	406	aagttgcgcgatgccatcaaat	158335	-	-	-	-
14552	MMP26	NM_021801.2	19	atgcagctcgctcatcttaagagt	158338	-	-	zinc binding	-
14553	MMP27	NM_022122.1	915	gtgaggatctattatgatatca	158376	-	-	-	-
14554	MMP28	NM_024302.2	399	aagtaaggatcctcatgaaca	158399	-	see also 8607 line	-	-
14555	MMP9	NM_004994.1	164	ctgtacgcgtatgttaacactcg	158412	-	-	Transcription factor p65	oral cavity cancers(口腔癌)、chondrosarcoma(軟骨肉腫)、colorectal cancer(大腸癌)、CNS Tumours(中枢神経腫瘍)、colorectal cancers(結
14556	MNAT1	NM_002431.1	45	agggttgcctcgtgtgaagacc	158432	-	see also 1566 line	-	-
14557	MPI	NM_002435.1	458	ccggccagtgaggagatgttaa	158439	-	-	zinc binding	carbohydrate-deficient glycoprotein syndrome(-)
14558	MPRP-1	NM_145243.2	1422	tggcaatcgagttgagtagctgg	158488	-	-	-	-
14559	MTMR4	NM_004687.3	304	gtgtggagagccgtgtatgttc	158505	-	see also 3215 line	-	-
14560	NLN	NM_020726.1	994	tggccaaactactcgtgtatagc	158577	-	-	zinc binding	-
14561	NPEPS	NM_006310.2	2482	caggacactgtatcgttaattgg	158656	-	see also 4404 line	-	-
14562	PAM	NM_015057.1	3444	tggagggttcggaccataactag	158740	-	-	-	-
14563	PAPPA	NM_002581.3	3688	ctgtgtgcggatgggacatatta	159080	-	-	zinc binding	-
14564	PLEKH1	NM_024310.2	582	aggcgctgctgacaaaagatgc	159103	-	see also 8608 line	-	-
14565	PLEKH2	NM_024613.2	535	aagggaatggatggcctaacaaga	159120	-	-	-	-
14566	POLR2H	NM_006232.2	197	tggatctaactcttagatgtaaac	159133	-	transcription_regulat	zinc binding	-
14567	PTER	NM_030864.2	1137	aggtcacggctattctcatatc	159184	-	-	-	-
14568	PTPRG	NM_002841.2	1818	gagccagccggagactatctacc	159223	-	see also 1862 line	-	-
14569	PTPRZ1	NM_002851.1	3254	atgataataaggcgctttctaaa	159395	-	phosphatase	zinc binding	-
14570	RAI17	NM_020338.1	3223	ctgcggagcaatagtaacgatga	159528	-	see also 7834 line	-	-
14571	RFP2	NM_005798.2	908	atgtgtcagaacccattgtattt	159546	-	cell_cycle、kinase_related	-	-

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14572	RFWD1	NM_032271.1	1061	cgagcgcacatcatgtaaatga	159570	-	-	-
14573	RIMS1	NM_014989.1	2863	atgatgaaccgattgataaa	159627	-	-	-
14574	RING1	NM_002931.2	1096	ggggccttcaagcgttgatgg	159652	-	transcription_regulat	-
14575	RNF129	NM_152620.2	1327	ggcgaattggcgatacatgaag	159664	-	-	zinc binding
14576	RNF137	NM_018073.5	1450	ccgagcaggcaccgagatgacc	159689	-	-	-
14577	RNF26	NM_032015.3	872	tggcctagagagcctaaagctcc	159694	-	-	-
14578	RNF28	NM_032588.2	767	cagaagttagacaggttgatgc	159702	-	-	zinc binding
14579	RNF29	NM_033058.2	485	ttggatagacatgggttatgg	159708	-	signal_transduction	-
14580	RNF30	NM_032546.2	392	aagagaagatcaattattactgc	159727	-	signal_transduction	-
14581	RNF39	NM_025236.2	658	aagtcacacatcccaagtcact	159740	-	-	-
14582	RNF6	NM_005977.2	477	cagtcctagatcgagatcagatgc	159743	-	-	-
14583	RNPEP	NM_020216.3	1237	ttgacccgagacacacctaata	159836	-	see also 4172 line	-
14584	RPH3A	NM_014954.1	1488	aggaaagcacaagctacgattcg	159868	-	see also 7802 line	-
14585	RTN4IP1	NM_032730.2	1102	ttggcggatccactgaacacatgg	159919	-	zinc binding	-
14586	RUFY1	NM_025158.2	1016	ctgcaacacagaccgaattgctca	159945	-	see also 9278 line	-
14587	RUFY2	NM_017987.2	418	atgagtatacagcactaatgatg	159973	-	see also 8872 line	-
14588	THOP1	NM_003249.3	1964	tggctacagaccccgactactacg	160017	-	see also 7189 line	-
14589	TMM10	NM_012456.1	281	tggacccgagtgctctctgaagac	160022	-	see also 2189 line	-
14590	TMM13	NM_012458.2	580	ccgtgtctcggcctcacaactcg	160026	-	zinc binding	-
14591	TMM8B	NM_012459.1	188	gtgtagacccgttcattgacacc	160035	-	see also 5338 line	-
14592	TMM9	NM_012460.2	478	ctgggagacctacaataaacttac	160037	-	-	-
14593	TP53I3	NM_004881.2	952	tggagactatgcttaactccatgc	160042	-	zinc binding	-
14594	TRAF2	NM_021138.2	1428	ggagccagctcaacgcacatgaaca	160057	-	apoptosis	-
14595	TRAF3	NM_003300.2	1717	ggggctctctcgacgctcatttgg	160079	-	-	-
14596	TRAF4	NM_004295.2	1438	ggggagatgatcgagcttctatcc	160088	-	see also 2231 line	-
14597	TRAF5	NM_004619.2	1788	atgccaaagaagccctacattaaa	160128	-	apoptosis,	-
14598	TRHDE	NM_013381.1	1140	tgggtgtgtagtagcatttatag	160154	-	signal_transduction	-
14599	TRIM10	NM_006778.2	755	ggggagattctccgggttagtgc	160238	-	kinase_related	-
14600	TRIM11	NM_145214.2	1596	cagcccgaccccgatgactatct	160252	-	see also 5414 line	-
14601	TRIM17	NM_016102.1	951	cagagttccggacagattgaag	160269	-	see also 4778 line	-
14602	TRIM31	NM_007028.2	1130	ctgcaggcggcagaaactacatcg	160281	-	-	-
14603	TRIM34	NM_021616.3	749	aagaagacgctggataaagtttgc	160293	-	-	-
14604	TRIM35	NM_015066.1	1386	aggagggcgagctgtcttctat	160311	-	-	-
14605	TRIM36	NM_018700.2	715	atgttgttccaactactaacttc	160333	-	-	-
14606	TRIM37	NM_015294.1	1001	ttgtgagaggttactactatct	160415	-	see also 6316 line	-
14607	TRIM38	NM_006355.2	618	gtgtcgggctccatttcattatgg	160474	-	kinase_related	-
14608	TRIM40	NM_033017.2	1323	ggagagagcgtcatgggaattact	160527	-	zinc binding	-
14609	TRIM41	NM_138700.2	847	aaggacggcccaaggaaattagaca	160538	-	-	-
14610	TRIM41	NM_033549.2	1267	tgggtgtcgtcgtgaactaaccc	160545	-	-	-
14611	TRIM42	NM_152616.3	1094	ctgcgcgcaatgacacaaatgic	160559	-	-	-
14612	TRIM44	NM_017583.3	1127	gggcagaaggcccttcatctagt	160591	-	see also 9901 line	-
						-	see also 7044 line	-

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14613	TRIM45	NM_025188.1	2233	gcgcaccaggagtgctactagg	160627	-	-	-
14614	TRIM46	NM_025058.1	135	acgcactggtcgcgaatgaacc	160629	-	-	-
14615	TRIM47	NM_033452.1	1716	ctgtacgggacggcaagatgagc	160653	-	-	-
14616	TRIM5	NM_033034.1	265	ctggaatcctggtaattgtaag	160655	-	-	-
14617	TRIM50A	NM_178125.2	1443	cgggtctacatgcactatgagc	160679	-	-	-
14618	TRIM52	NM_032765.2	646	gggacaacgtagactatagtgg	160686	-	-	-
14619	TRIM6	NM_058166.2	754	aagggtctacgaattatagaaga	160699	-	-	-
14620	TRIM9	NM_015163.3	328	cagggtctcgcactatgactatc	160723	-	-	-
14621	TSBF1	NM_173084.1	1004	ctggaggttaaacccgttgaatt	160764	-	-	-
14622	WDFY1	NM_020830.2	1197	tgggacccgacccgcattgtaaga	160798	-	-	-
14623	ZADH1	NM_152444.1	652	ctgtggtatataaagaacaatg	161153	-	-	-
14624	ZFPL1	NM_006782.2	673	ctgtgcgcccgccctttacagc	161173	-	-	-
14625	ZFYVE1	NM_021260.1	2460	gtgcgacgtcctttaaagataac	161211	-	-	-
14626	ZFYVE16	NM_014733.1	985	ctgtttgactcgcacaaagtcc	161238	-	see also 5923 line	-
14627	ZFYVE19	NM_032850.3	193	cagggtcgtggagttagattacc	161369	-	see also 9313 line	-
14628	ZFYVE20	NM_022340.1	829	aagctctacgagaaattacgact	161398	-	see also 8332 line	-
14629	ZFYVE21	NM_024071.2	490	cagccactatgaatcgaattg	161421	-	-	-
14630	ZFYVE26	NM_015346.2	3119	ccgaacggcttgaatagtagc	161462	-	-	-
14631	ZNF185	NM_007150.1	1104	cagtatctgcacgctatagcaac	161533	-	zinc binding	-
14632	ZNF198	NM_003453.2	3680	gagatccagcggcccaatggaga	161625	-	see also 2319 line	-
14633	ZNF505	NM_031218.2	503	atggacttaaccagtgtagtaca	161658	-	-	-
14634	AGMAT	NM_024758.3	515	aggcgatgtgaatgtcaattctt	161662	-	manganese binding	-
14635	ARG1	NM_000045.2	860	gggtactctcaggattagatat	161694	-	manganese binding	hyperargininemia(高アルギニン血症)
14636	ARG2	NM_001172.2	402	ctggcaatcgggtaccattagtg	161706	-	manganese binding	-
14637	B3GAT1	NM_018644.2	355	ctgtctgcgggtacataaagatga	161723	-	-	-
14638	B3GAT2	NM_080742.1	802	cagccaggatgcgaagaattctga	161738	-	manganese binding	-
14639	B4GALT6	NM_004775.2	1317	ctggtgatagattgtatcaaaa	161799	-	transferase, transferring glycosyl groups	-
14640	CDIPT	NM_006319.2	719	cgggtcttcggatctactacacc	161807	-	see also 4421 line	-
14641	DCD	NM_053283.1	348	aggagccgtccatgcagcttaaaag	161812	-	phosphoric monoester hydrolase	-
14642	DKFZP566E144	NM_015523.1	304	ctgaaggtcctaacctgattata	161819	-	see also 6447 line	-
14643	GALNT1	NM_020474.2	1203	tagattatggagatatatcgtca	161846	-	see also 7884 line	-
14644	NPEPL1	NM_024663.2	1110	cagatgcgtctgtctatctctgc	161869	-	-	-
14645	PDE8A	NM_002605.1	996	ttgctogatactataaatcatg	161899	-	see also 1685 line	-
14646	PDE8B	NM_003719.1	818	aagttgcgtcccggtcaaatga	161943	-	see also 2547 line	-
14647	PDE9A	NM_002606.1	1168	gagctgcgggtcgcgtacaatga	162007	-	signal transduction	manganese binding
14648	POFUT1	NM_015352.1	203	ttgggtctctctggcatttgcaaa	162023	-	transcription_regulat	-

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14649	PPM1A	NM_021003.2	1163	tagtgacacacgtgttgataag	162067	phosphatase, kinase_related	-	-
14650	PPM1B	NM_002706.3	1479	ttgctgcaagcgtaatgtatt	162107	phosphatase	-	-
14651	PPM1D	NM_003620.2	616	tcgtccgagcggcctaaggttg	162119	phosphatase, cell_cycle	protein phosphatase type	breast cancer(乳癌)
14652	PPM1F	NM_014634.2	1089	cagagccatcggggatgtctcc	162155	phosphatase, apoptosis	-	-
14653	PPM1G	NM_002707.3	403	tggtattgacgccaattgacc	162159	phosphatase, cell_cycle	-	-
14654	PPP1CA	NM_002708.2	485	aagagacgtacaacatacaact	162174	-	protein phosphatase type	-
14655	PPP1CB	NM_002709.1	1028	ttgctaaccgacagttggttaacc	162204	see also 1763 line	-	-
14656	PPP1CC	NM_002710.1	156	tggtcgatttagataaaactcaac	162211	phosphatase	protein phosphatase type	-
14657	PPP2CA	NM_002715.1	1035	atggcaacttgacgatactctaaa	162261	see also 1767 line	-	-
14658	PPP2CB	NM_004156.1	801	cagtgacaccaattactgttatt	162283	-	protein phosphatase type	-
14659	PPP4C	NM_002720.1	636	cggacaatcgaccgaaagcaaga	162290	-	protein phosphatase type	-
14660	PPP5C	NM_006247.2	841	tcggagaccacccctatatatt	162303	phosphatase, transcription, regulat	protein phosphatase type	-
14661	PPP6C	NM_002721.3	959	cagaacgacaacgcctatttcc	162332	or, kinase related	2C	-
14662	ABP1	NM_001091.1	662	cgcagttggcttatctacagc	162356	see also 1768 line	heparin binding	-
14663	AOC2	NM_001158.2	1787	ctgctagcaacccagactaatgc	162394	-	-	-
14664	AOC3	NM_003734.2	772	gggacggaaacctgtgacaatga	162398	-	electron	-
14665	ATOX1	NM_004045.2	281	ctgtctctgggtctctcaataag	162405	-	copper binding	-
14666	CCS	NM_005125.1	379	ctgctctcctcgagggaactattg	162408	-	intracellular copper transporter	-
14667	CP	NM_000096.1	1954	gaggccgatgtacatggatata	162493	-	multicopper	hypoceruloplasminemia (aceruloplasminemia)(低セ
14668	DBH	NM_000787.2	1343	aggagattccgatgttgagaag	162520	-	ferroxidase iron	セルロプラスミン血症)
14669	DCT	NM_001922.2	1214	cagacgatccgactctgttagt	162536	see also 487 line	transport mediator	hypoceruloplasminemia(低セ
14670	F5	NM_000130.2	2633	gggatacgtctacttccactgg	162636	see also 1222 line	-	セルロプラスミン血
14671	F8	NM_000132.2	7132	ctgactcgtctactctcgattca	162915	see also 116 line	-	-
14672	FLJ12892	NM_022757.3	5892	gtgactcgtactaagaagaataac	162962	see also 117 line	-	-
14673	HEPH	NM_014799.2	2159	gggatgaggcaatctataatgt	163005	-	-	-
14674	HYAL4	NM_012269.1	1177	cagtaaccgatattgaatttta	163061	-	-	-
14675	LOX	NM_002317.3	806	ctgacgacaacccctattacaac	163077	see also 1490 line	-	-
14676	LOXL1	NM_005576.1	1419	ttgttcccagaccccaactatgt	163093	-	protein-lysine 6-oxidase	-
14677	LOXL2	NM_002318.1	2403	aggttcagatccctgattactcc	163119	-	receptor activity	scavenger receptor
14678	LOXL4	NM_032211.5	476	ttggaccagtcgggcttaatgg	163143	-	receptor activity	scavenger receptor

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14679	MASS1	NM_032119.1	17786	atgctcgactgacaaactgtct	163709	-	receptor activity, gpcr, signal transduction	-
14680	MOXD1	NM_015529.1	1696	tgttgattcaaggaaatcacagc	163759	-	see also 6452 line	-
14681	PAM	NM_000919.2	866	caggtacactatgggataatag	163782	-	see also 595 line	-
14682	SCO2	NM_005138.1	694	cagttacgcgtgtactacaatg	163842	-	copper binding	-
14683	SLC14A2	NM_007163.2	1188	agggaccgctcaggtgtgtctcg	163848	-	see also 4965 line	-
14684	SLC15A4	NM_145648.1	1462	aagtatcgacggcctggaatttg	163895	-	see also 9791 line	-
14685	SLC35B2	NM_178148.1	994	atgcctgtttgctctataagatg	163906	-	kinase related	-
14686	TRRAP	NM_003496.1	4287	cgttactctgactcttcaagaat	163987	-	-	-
14687	LTF	NM_002343.1	1019	ctgaaggagcagatgatgagttta	164140	-	Smad3/Sp-1 heterodimer	-
14688	MF12	NM_005929.3	354	gggcgaagtgtacatcaagagg	164151	-	-	melanoma(メラノーマ)
14689	MTF	NM_177478.1	275	atgcgtctactgtgtactgtcc	164174	-	-	-
14690	RSL1	NM_030785.1	1489	tcgtgaacgcgcgaaagatcaag	164186	-	-	-
14691	TF	NM_001063.2	1888	aagcttgctgccacaagatatta	164230	-	Nuclear factor 1 C-type-7	atransferrinemia(無トランスフェリン血症)、alcohol abuse liver dysfunction(アルコール依存性肝障害)
14692	FECH	NM_000140.1	410	agcggatgcccccacatcaagatat	164246	-	see also 126 line	-
14693	ACO2	NM_001098.1	1522	ttgcgggaacctoaaagttaaac	164296	-	-	-
14694	ADHFE1	NM_144650.1	534	caggaaaccggggagtgaaactact	164310	-	iron binding	-
14695	ALOX12	NM_000697.1	1063	aagctctgggtccgaaatcaga	164341	-	Nuclear factor NF-kappa-B p50 subunit	-
14696	ALOX12B	NM_001139.1	1946	ctgatccgatattgtactatagt	164369	-	see also 726 line	-
14697	ALOX15	NM_001140.3	1143	aggtcctcogctogatacatcc	164380	-	lipoxigenase	-
14698	ALOX15B	NM_001141.1	580	tggagctcaatatcaaatctcc	164392	-	lipoxigenase	-
14699	ALOX5	NM_000698.1	380	gagggatggacgcgcaagttgg	164399	-	apoptosis,	atherosclerosis(粥状硬化症)、arachidonate 5-lipoxygenase(-)
14700	ALOXE3	NM_021628.1	640	tggatcgggtacagaagtaacagg	164434	-	lipoxigenase	-
14701	NIFU	NM_014301.1	313	cagcatgtgtgtgacgtaatgaaa	164455	-	-	-
14702	PAH	NM_000277.1	1078	ttgctatgagttacaaatcacattt	164468	-	phenylalanine 4-monooxygenase	phenylketonuria(フェニルケトン尿症)
14703	SCD4	NM_024906.1	718	tcgcaagcatcgagatgtatttg	164486	-	-	-
14704	TH	NM_000360.2	804	gcggctaccggggaagacaatc	164500	-	tyrosine 3-monooxygenase	schizophrenia(精神分裂症)、Segawa syndrome(Segawa症候群)
14705	TPH1	NM_004179.1	367	ctgatgtatggatctgtaactaga	164511	-	see also 2805 line	-
14706	TPH2	NM_173353.2	842	atgcttgcgagagatttgaaa	164552	-	see also 10062 line	-
14707	AOX1	NM_001159.2	1605	atgcgtacgtagatgtaattca	164606	-	xanthine dehydrogenase	-
14708	SUOX	NM_000456.1	1771	ctgtggcataatgatgaatgg	164682	-	sulfite oxidase	sulfite oxidase deficiency(亜硫酸酸化酵素欠損)
14709	XDH	NM_000379.2	2048	ttgcgaaggataaggttacttgt	164710	-	see also 302 line	-
14710	AFP	NM_001134.1	970	tggaaactgtgtcaatgtataatt	164775	-	nickel binding	hereditary persistence of alpha-fetoprotein (HPAFP)(遺伝性αフェトプロテイン血症)
14711	ADCV2	NM_020546.1	1402	gtgacattaggagcccatattta	164836	-	see also 7895 line	-

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14712	ADCY3	NM_004036.2	1937	gagagtcgcgcacagtagtaaaag	164881	-	-	guanylate cyclase	-
14713	ADCY4	NM_139247.2	1318	gagctagaggagcgcctactatct	164925	-	-	-	-
14714	ADCY5	NM_183357.1	2266	caggtagacgacccgatttggtgc	164950	-	-	-	-
14715	ADCY6	NM_015270.2	3361	agggaggggtggccctcaaatata	164967	-	see also 6300 line	-	-
14716	ADCY7	NM_001114.1	3223	cgcctcagcgcgcgcacataacc	164986	-	see also 697 line	-	-
14717	ADCY8	NM_001115.1	3765	ctgtctcaacggcgactataacg	165013	-	see also 698 line	-	-
14718	ADCY9	NM_001116.1	2727	ttgcgcgtgcgcactactgaac	165087	-	see also 704 line	-	-
14719	ADK	NM_001123.2	958	gaggcagcagaatcgtgactctoa	165127	-	see also 712 line	-	-
14720	ADPRH	NM_001125.2	1311	aagagacagcgtaggccttttat	165151	-	-	magnesium binding	-
14721	ALPI	NM_001631.2	1467	gagcttcgtagcgcctatgcatgg	165157	-	phosphatase	magnesium binding	-
14722	ALPL	NM_000478.2	1662	cggcgtccacgagcagaactacg	165173	-	phosphatase	magnesium binding	-
14723	B3GALT3	NM_003781.2	1204	atgtcgggactctgttgaattta	165204	-	see also 2586 line	-	-
14724	CD51	NM_001263.2	895	atgatctaccatggttttagaaca	165218	-	see also 827 line	-	-
14725	CERK	NM_022766.4	1459	aagtttatcgcgtcaagaatttc	165273	-	kinase related	-	-
14726	CLDN16	NM_006580.2	505	tggttaactcgcgcgttgatgatt	165299	-	-	hypercalciuria(高カルシウム尿症)、 hypomagnesemia(低マグネシウム血症)	-
14727	COMT	NM_000754.2	922	gtgcacacactaccacatcgttcc	165318	-	-	structural molecule	-
14728	DKFz761					-	-	-	-
14729	G058	NM_152542.2	532	gtgggggtgcgcctcacagattgg	165323	-	phosphatase	-	-
14730	ENO2	NM_001975.2	773	taggtgcagaggtctaccataca	165343	-	see also 1258 line	-	-
14731	ENO3	NM_001976.2	870	tggaagtaacagatcttgacttca	165364	-	-	-	-
14732	ENTPD1	NM_001776.2	694	cagggtgcagagatcactactgg	165388	-	see also 1159 line	-	-
14733	ENTPD3	NM_001248.1	1326	aggatatgccgcctcttacttcg	165436	-	-	magnesium binding	-
14734	ENTPD5	NM_001249.1	750	tggtatcgcagcgaaggcatattag	165454	-	phosphatase	uridine	-
14735	ENTPD6	NM_001247.1	443	aggcttcttaccgggcatcatgttt	165470	-	phosphatase	diphosphatase	-
14736	FACL2	NM_001995.2	388	acgaagatccgcactacttgaca	165487	-	-	magnesium binding	-
14737	FACL3	NM_004457.2	1560	agggatcagggctcactgaatct	165587	-	-	magnesium binding	-
14738	FACL5	NM_016234.2	730	tggttgcacagctactctatg	165694	-	-	magnesium binding	-
14739	FACL6	NM_015256.1	352	cagctactaccactactactatga	165727	-	-	magnesium binding	-
14740	FDF1	NM_004462.2	112	tggtccacccgagaggtcttaca	165759	-	see also 3012 line	-	-
14741	FMO2	NM_001460.1	1336	cagacgttgacagaccaaattatgt	165819	-	-	magnesium binding	-
14742	GRIN1	NM_000832.4	3151	gagctccgttgatctactctcc	165839	-	receptor activity, channel,	-	-
14743	GRIN2A	NM_000833.2	4425	ggatgaccacacgcttggttatt	165915	-	signal transduction	-	-
14744	GRIN2B	NM_000834.2	2738	tggtcagttccgacatgcttta	165965	-	see also 544 line	-	-
14745	GRIN2C	NM_000835.2	1312	ggggagatggcgtctctatcatg	165991	-	see also 546 line	magnesium binding	-
14746	GRIN2D	NM_000836.2				-	-	-	-

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14745	GRIN2D	NM_000836.1	1156		cggcgagagctctgcataggtact	166003	-	receptor_activity, channel,		magnesium binding	-
14746	HPOL2	NM_012260.1	1812		tttgctgaaccgctctaatagt	166067	-	see also 5241 line			
14747	HPRT1	NM_000194.1	652		aggatatcccttgactataatg	166088	-			transferase, transferring glycosyl groups	arthritis(関節炎)
14748	ID1	NM_004508.2	533		acgaatacgtgttgatgcacc	166097	-			magnesium binding	-
14749	ID2	NM_033261.2	317		ctgtagtagcaccacattataca	166120	-				-
14750	ILKAP	NM_030788.2	834		ggatagtcggggcaatcttgt	166141	-	see also 8943 line			
14751	IMPA1	NM_005536.2	793		gtggcgtgcttaataagattata	166161	-	phosphatase, signal_transduction	myo-inositol-1(or 4)- monophosphatase		-
14752	ITGAE	NM_002208.3	2221		ggctgcgtgaatgcgcgtttatgt	166183	-	receptor_activity, signal_transduction	magnesium binding		-
14753	ITGAL	NM_002209.1	2752		gggggaactcagttgaattgcacg	166243	-	receptor_activity, signal_transduction	magnesium binding		-
14754	ITGAM	NM_000632.2	656		aagaattccgggattcaactttacc	166252	-	receptor_activity, signal_transduction	Smad3/Sp-1 heterodimer		atherosclerosis(粥状硬化症)
14755	ITGAX	NM_000887.3	2328		cgcgcgatgctcagagatacttc	166312	-	receptor_activity, signal_transduction	Smad3/Sp-1 heterodimer		-
14756	LYSAL1	NM_004901.1	318		ctgtgtcataatccgaaaataag	166324	-	see also 3404 line			
14757	MTHFD2	NM_006636.2	1066		gcgagaagtctgaagtctaaag	166373	-		methylenetetrahydr ofolate dehydrogenase (NAD+)		-
14758	MTHFS	NM_006441.1	452		ggggagggaaggaggtactatga	166379	-		magnesium binding		-
14759	PFKL	NM_002626.2	1255		tggctccgactgaacatcatca	166390	-	kinase_related	magnesium binding		-
14760	PFKM	NM_000289.3	1705		aagcgtgggtgtttatcatga	166427	-	see also 255 line			
14761	PFKP	NM_002627.2	523		caggaaaggccagatcgataagg	166444	-	see also 1698 line			
14762	PGM1	NM_002633.2	455		acggagatcggtcgcttggttato	166468	-		phosphoglucomuta se		-
14763	PKLR	NM_000298.3	780		cagocggaaggagctgaacttc	166509	-	kinase_related		pyruvate kinase deficiency(ピルビン酸キナーゼ 欠損症), Gaucher disease(ゴーシェ病), hemolytic anemia(溶血性貧血)	
14764	PP	NM_021129.2	647		gtggaactggttagaaggtataa	166543	-	phosphatase	magnesium binding		-
14765	PPA2	NM_006903.3	154		cagaattaccgcctctctttaa	166549	-	see also 4841 line			
14766	PPAT	NM_002703.3	367		gagttcggtgccaacattcaaat	166579	-		transferase, transferring glycosyl groups		-
14767	PPM1E	NM_014906.3	1752		atgatggcgtgtggattcattc	166639	-	phosphatase			-
14768	PRPS1	NM_002764.2	540		cagagccggctgtcctaaagtgg	166664	-	kinase_related	ribose-phosphate pyrophosphokinase	PRPS1 superactivity(PRPS1亢進症), arthritis(関 節炎)	
14769	PRPS1L1	NM_175886.2	355		aagagccgggtccccaatctctgc	166668	-				-



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14770	PRPS2	NM_002765.2	257	gagcggctgcggggaattaacg	166674	-	see also 1808 line	phosphoserine phosphatase	-	
14771	PSPH	NM_004577.2	346	tgggtgcttaggagatattgtag	166703	-	phosphatase	phosphoserine phosphatase	-	
14772	SMPD2	NM_003080.1	1326	tggggccaccttcgctagctatgt	166725	-	-	sphingomyelin phosphodiesterase	-	
14773	BSN	NM_003458.1	10406	gtggagagcagccgcatattatgg	166793	-	see also 2345 line	heavy metal	lactacidosis(ラクトアシドーシス)	
14774	DLD	NM_000108.2	1020	ttggccgagcagcccttactaag	166835	-	-	-	-	
14775	FLJ10511	NM_018120.3	270	ctgacgctctatggtagtaaac	166844	-	-	-	-	
14776	GSR	NM_000637.1	759	cggcgtgataaggtacttagaag	166887	-	see also 423 line	-	-	
14777	KIAA0467	NM_015284.1	992	cagagcgttccctccacacaattc	166925	-	see also 6313 line	-	-	
14778	PITPNM1	NM_004910.1	3363	cggctacgtgatcgtgtatgca	166993	-	see also 3412 line	-	-	
14779	PKD1	NM_000298.2	3516	ctgacccgtgtggcatctcatgc	167000	-	signal_transduction	lectin	polycystic kidney disease(多発性嚢胞腎)	
14780	SOD1	NM_000454.3	343	tgggtgtggccgatgtgtctattg	167035	-	-	Smad3/Sp-1 heterodimer	atherosclerosis(粥状硬化症)、amyotrophic lateral sclerosis(遺伝性筋萎縮性側索硬化症)、alcoholism(アルコール依存症)	
14781	TXNRD1	NM_003330.2	1185	tagcgtcaactgtgtatggttagg	167055	-	signal_transduction	-	-	
14782	C5	NM_001735.2	601	cagtcatactctagatatgtat	167097	-	see also 1149 line	-	-	
14783	CCL11	NM_002986.2	380	gggtgcaggattccatgaagtat	167257	-	signal_transduction	chemokine	-	
14784	CCL15	NM_004167.3	793	aagctgaagccctactcaatata	167264	-	-	-	-	
14785	CCL16	NM_004590.2	244	ctgtcacctgccagcaaatcat	167268	-	-	chemokine	-	
14786	CCL18	NM_002988.2	184	aagttcatgttgactattctga	167276	-	signal_transduction	chemokine	-	
14787	CCL19	NM_006274.2	303	cagggtgcctctgttagtttca	167277	-	signal_transduction	chemokine	-	
14788	CCL2	NM_002982.2	210	agggctcgcgagctatagaagaat	167280	-	kinase_related、apoptosis、gpcr	protein kinase	rheumatoid arthritis(関節リウマチ)、atherosclerosis(粥状硬化症)	
14789	CCL20	NM_004591.1	160	tggatacacagacogtattcttc	167282	-	signal_transduction	chemokine	-	
14790	CCL22	NM_002990.3	110	cagcgtctgtgcggtgattacg	167288	-	signal_transduction	chemokine	-	
14791	CCL23	NM_005064.3	384	aagaaggggcgacgtttctgtgc	167294	-	signal_transduction、gpcr	-	-	
14792	CCL24	NM_002991.2	240	gtgggtccagaggatcatgaaga	167295	-	signal_transduction	chemokine	-	
14793	CCL25	NM_005624.2	367	aagttatcatcgtccaagtttag	167307	-	-	-	-	
14794	CCL26	NM_006072.3	211	tggacctgggtgcgaagctatga	167310	-	signal_transduction	chemokine	-	
14795	CCL28	NM_019846.3	141	ctgttcacagcagggtttcacatc	167318	-	-	-	-	
14796	CCL5	NM_002985.2	305	atgggttcggagagtagatcaact	167337	-	signal_transduction	translation	-	
14797	CCL7	NM_006273.2	147	ttggattaaacttcaactaac	167340	-	signal_transduction	heparin binding	-	
14798	CCL8	NM_005623.2	520	ttgtcagccagatcagtttcc	167343	-	signal_transduction	heparin binding	-	
14799	CX3CL1	NM_002996.1	250	atggcgcaaacgcgcgaatcatc	167351	-	signal_transduction	chemokine	atherosclerosis(粥状硬化症)	
14800	CXCL1	NM_001511.1	374	aagatgtgaacaggtgacaatc	167359	-	signal_transduction、gpcr	translation regulator	melanoma(メラノーマ)	
14801	CXCL10	NM_001565.1	234	ttgtccacgtgttgagatcattg	167364	-	kinase_related、signal_transduction	chemokine	-	
14802	CXCL11	NM_005409.3	116	tagccttgctgtgatattgtgt	167369	-	signal_transduction	chemokine	-	

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14825	IL6	NM_000600.1	420	ttggagtttgaggtatatacttaga	167541	-	signal_transduction	Rel A homodimer	rheumatoid arthritis(関節リウマチ)、kaposi sarcoma(カポジ肉腫)、non-hodgkin lymphoma(非ホジキンリンパ腫)、atherosclerosis(粥状硬化症)、breast cancer(乳癌)、ovarian cancer(卵巣癌)、prostate cancer(前立腺癌)、Alzheimer disease(アルツハイマー病)、renal cell carcinoma(腎細胞癌)、multiple myeloma(多発性骨髄腫)、juvenile rheumatoid arthritis(若年性慢性関節リウマチ)、Hodgkin's disease(ホジキン病)、melanoma(メラノーマ)
14826	IL4	NM_000589.2	438	acggacacaaagtgcgatacacc	167545	-	-	-	-
14827	IL3	NM_000588.3	146	ctgggttaactgcctctaacaatga	167551	-	-	receptor signaling protein	rheumatoid arthritis(関節リウマチ)、myelodysplastic syndrome(骨髄異形成症候群)
14828	IL2	NM_000586.2	612	cagcaataatcaacgtaataagttc	167575	-	-	Retinoic acid receptor RXR-alpha	severe combined immunodeficiency due to IL2 deficiency(インターロイキン2欠損による免疫不全症)
14829	IFNG	NM_000619.1	236	cagatgtagcggataatggaact	167583	-	signal_transduction	FOS-related antigen 1	rheumatoid arthritis(関節リウマチ)
14830	IFNA6	NM_021002.1	307	aggcttctagacaaactctatatac	167592	-	-	-	-
14831	IFNA8	NM_002170.1	405	aggaagtggcggtgatagagtct	167595	-	-	-	-
14832	IFNK	NM_020124.1	385	aagcagagtacctgaaccaatgc	167602	-	transcription_regulation or,	-	-
14833	IFNT1	NM_176891.2	498	ctggccattgtccaaagtagaaa	167611	-	-	-	-
14834	IL15	NM_000585.2	673	gagtcgagagatgcgaagtattca	167623	-	signal_transduction	-	-
14835	ED1	NM_001399.3	1061	ctggctctgcatacactatgaacc	167637	-	see also 972 line	-	-
14836	LTA	NM_000595.2	719	cagccctagtagtactgtctctttg	167645	-	signal_transduction , apoptosis,	-	-
14837	TNF	NM_000594.2	736	ctgggtatgagcccatctatctgg	167656	-	signal_transduction , apoptosis,	-	-
14838	TNFSF10	NM_003810.2	140	ctgctgctgctgctgctgtcttca	167660	-	apoptosis,	tumor necrosis factor receptor ligand	arthritis(関節炎)
14839	TNFSF11	NM_003701.2	376	atggatctaatagataatcaga	167687	-	signal_transduction , kinase_related	-	-
14840	TNFSF13	NM_003808.2	1312	gagactctattccgaigtataag	167700	-	see also 2526 line	-	-
14841	TNFSF13B	NM_006573.3	289	gagcagtcacgccttactctttg	167706	-	signal_transduction	-	rheumatoid arthritis(関節リウマチ)
14842	TNFSF15	NM_005118.2	541	cagagtcggagagactacttctatt	167719	-	signal_transduction , cell_cycle	tumor necrosis factor receptor ligand	lupus erythematosus(円板状エリデマトーデス)、rheumatoid arthritis(関節リウマチ)、systemic lupus erythematosus(全身性エリデマトーデス)
14843	TNFSF4	NM_003326.2	653	atggcggagagactgattcttattc	167731	-	signal_transduction	tumor necrosis factor receptor ligand	-

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14844	TNFSF5	NM_000074.1	799	acgtccttggcttactactaaact	167754	-	apoptosis, signal_transduction	translation regulator	atherosclerosis(粥状硬化症)、 immunodeficiency(免疫不全症)
14845	TNFSF6	NM_000639.1	890	ctgggggcagtggttaaatcttac	167765	-	apoptosis, signal_transduction kinase_related	translation regulator	autoimmune lymphoproliferative syndrome(免疫 細胞増殖性疾患)、systemic lupus erythematosus(全身性エリテマトーデス)。
14846	TNFSF8	NM_001244.2	570	atgggaatctggtgatccaattc	167776	-	signal_transduction apoptosis	tumor necrosis factor receptor ligand	-
14847	TNFSF9	NM_003811.2	421	aggctggagctctactatgtcttc	167792	-	apoptosis, signal_transduction	tumor necrosis factor receptor ligand	-
14848	IL1RN	NM_000577.3	563	aaggcgtcatggtcaccacaattc	167807	-	-	-	-
14849	IL18	NM_001562.2	400	aggaatacggcctctattgaag	167819	-	apoptosis	interleukin-1 receptor ligand	diabetes(糖尿病)、melanoma(メラノーマ)
14850	IL1A	NM_000575.3	1370	atgacgcctcactcaataagata	167845	-	apoptosis, cell_cycle	interleukin-1 receptor ligand	rheumatoid arthritis(関節リウマチ)、Alzheimer disease(アルツハイマー病)、osteoarthritis(変形 性関節症)
14851	IL1B	NM_000576.2	167	atggcctaaacagatgaagtgc	167867	-	apoptosis, cell_cycle	translation regulator	Alzheimer disease(アルツハイマー病)、Parkinson disease(パーキンソン病)、melanoma(メラノーマ)
14852	IL1F10	NM_032556.4	437	atggcaagatactacataataa	167879	-	see also 9244 line	-	-
14853	IL1F6	NM_014440.1	122	cagtcactattgcttactatcca	167890	-	-	-	-
14854	IL1F7	NM_014439.3	173	ctgcacctctcgaattgttaag	167900	-	-	-	-
14855	IL1F8	NM_014438.3	524	cagcaccacaaactcctatgctatt	167909	-	-	-	-
14856	IL1F9	NM_019618.2	105	aaggcgcgtctatcaatcaatgt	167926	-	-	-	-
14857	INHBC	NM_005538.2	585	ttgtgctgggtccacataatacc	167944	-	-	inhibin	-
14858	TGFB1	NM_000660.1	1677	gagcctggagcaccacactattgc	167955	-	apoptosis, cell_cycle, signal_transduction	Smad3/Sp-1 heterodimer	atherosclerosis(粥状硬化症)、diabetes mellitus(糖尿病)、Alzheimer disease(アルツハイ マー病)、diabetes(糖尿病)
14859	TGFB2	NM_003238.1	1092	tggatgcggcctattgctttaga	167989	-	-	AP-1(c-Jun/ATF2 heterodimer)	-
14860	TGFB3	NM_003239.1	899	gagtcacacttaggtctagaat	168016	-	signal_transduction cell_cycle	transforming growth factor-beta receptor ligand	-
14861	DTR	NM_001945.1	857	aagtgaaattggcgatgactaat	168036	-	receptor activity, signal_transduction	receptor	diphtheria toxin sensitivity(ジフテリア毒素過敏 症)
14862	EREG	NM_001432.1	342	ctgtgctcaagtgtcaataaca	168038	-	cell_cycle, signal_transduction	growth factor	-
14863	ECGF1	NM_001953.2	541	tggctgcaagtgccaatgatca	168055	-	signal_transduction	thymidine phosphorylase	-
14864	FIGF	NM_004469.2	658	tgggggaactactctgaattact	168069	-	cell_cycle	platelet-derived growth factor receptor ligand	-

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14865	PDGFB	NM_002608.1	1131	tgatccgctcctttgatgatct	168099	-	cell_cycle	-	Ewing's sarcoma(ユーンイング肉腫)、skin cancer(皮膚癌)、dermatofibrosarcoma protuberans(隆起性皮膚線維肉腫)
14866	VEGFB	NM_003377.3	146	gtgtcatggatagatgtgtatatac	168114	-	signal_transduction、cell_cycle	vascular endothelial growth factor receptor	neuroblastoma(神経芽細胞腫)
14867	MUC4	NM_004532.2	1514	ggagacagcgggacttaacgattcc	168131	-	-	-	lung squamous cell carcinoma(肺扁平上皮癌)、lung cancer(肺癌)
14868	KITLG	NM_000899.1	270	cagggaatcgtgtactaataatg	168198	-	see also 584 line	-	-
14869	CSF1	NM_000757.3	590	gggtccgaacttctatagacaa	168236	-	-	-	-
14870	IL22	NM_020525.3	380	ctgatagttccgacctatag	168253	-	-	-	-
DKFZp451									
14871	J0118	NM_175852.3	90	ggggctgcgaacaaatccaatcc	168258	-	-	-	-
14872	AREG	NM_001657.2	491	ctggctatatgtgatgatcca	168273	-	-	-	-
14873	ARS	NM_020427.2	127	gtgttctctcaggaacattacc	168281	-	-	-	-
14874	BMP10	NM_014482.1	615	aagggtatgtatgatatacagtg	168292	-	-	-	-
14875	BMP15	NM_005448.1	1068	ctgtgtccctgataagatgttc	168335	-	-	-	-
14876	BMP2	NM_001200.1	980	gggacacgccaaccatgattccg	168347	-	-	-	-
14877	BMP3	NM_001201.1	1355	ggagcagacgctccaatttgatg	168383	-	-	-	-
14878	BMP5	NM_021073.2	996	aagagtcgggtactcagtaagg	168420	-	-	-	-
14879	BMP6	NM_001718.2	1053	ttgtggacacccggttagtgatg	168455	-	-	-	-
14880	BMP7	NM_001719.1	687	acgttcggatcagcgtttatca	168470	-	-	-	-
14881	CXCL16	NM_022059.1	1196	cagatctgcgggttcaatatata	168501	-	-	-	-
14882	FAM3B	NM_058186.2	146	aaggacgtttgttgtaagta	168506	-	-	-	-
14883	FAM3C	NM_014888.1	262	atgcaagttaggaatctattt	168519	-	-	-	-
14884	FAM3D	NM_138805.2	524	acgtgtggccctactatgttc	168540	-	-	-	-
14885	FLT3LG	NM_001459.2	387	gcgcgtgaacacggagatacact	168551	-	-	-	-
14886	GDF10	NM_004962.2	1633	tggataatctcaccgaatctttt	168558	-	-	-	-
14887	GDF11	NM_005811.2	1063	ccggccagtcgagtgacatgttc	168569	-	-	-	-
14888	GDF2	NM_016204.1	667	aagcgtggtcaattatgatgttc	168577	-	-	-	-
14889	GDF3	NM_020634.1	1097	aagacatgtagtcgatgaatgt	168602	-	-	-	-
14890	GDF8	NM_005259.1	976	ctgtcgttaccctcactatgttg	168629	-	-	-	-
14891	GDF9	NM_005260.2	1126	aggtacaacctcgatactgttaa	168666	-	-	-	-
14892	GPI	NM_000175.2	410	ctgcgggaaccgggtcaaacacac	168676	-	-	-	-
14893	IL16	NM_004513.3	2126	atggacatgtcagattgtatc	168721	-	-	-	-
14894	IL17	NM_002190.2	228	aaggtctcagattactacaacc	168759	-	-	-	-
14895	IL17C	NM_013278.3	437	ctgtgcagaggtctgtatcgatgc	168761	-	-	-	-
14896	IL17F	NM_052872.2	273	ccggtacccctcgaggaagtgtac	168768	-	-	-	-
14897	IL19	NM_013371.2	1410	ggggagctcgacgctttcttag	168780	-	-	-	-
14898	IL20	NM_018724.2	339	cagacccctcagcattactct	168792	-	-	-	-
14899	IL21	NM_021603.1	284	cagaaggcccaactaaagtoagc	168804	-	-	-	-
14892	GPI	NM_000175.2	410	ctgcgggaaccgggtcaaacacac	168676	-	-	-	-
14893	IL16	NM_004513.3	2126	atggacatgtcagattgtatc	168721	-	-	-	-
14894	IL17	NM_002190.2	228	aaggtctcagattactacaacc	168759	-	-	-	-
14895	IL17C	NM_013278.3	437	ctgtgcagaggtctgtatcgatgc	168761	-	-	-	-
14896	IL17F	NM_052872.2	273	ccggtacccctcgaggaagtgtac	168768	-	-	-	-
14897	IL19	NM_013371.2	1410	ggggagctcgacgctttcttag	168780	-	-	-	-
14898	IL20	NM_018724.2	339	cagacccctcagcattactct	168792	-	-	-	-
14899	IL21	NM_021603.1	284	cagaaggcccaactaaagtoagc	168804	-	-	-	-

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14900	IL26	NM_018402.1	157	ctgtgacgcctctctataaaa	168813	-	-	cytokine	-
14901	MDK	NM_002391.2	265	tggagcgcagctgaagtaaaagt	168825	-	-	heparin binding	-
14902	MIF	NM_002415.1	367	cagccggacagaggtctacatca	168827	-	-	isomerase	rheumatoid arthritis(関節リウマチ)、 atherosclerosis(粥状硬化症)、lung cancer(肺癌)
14903	NODAL	NM_018055.3	991	gtgctctagatcaccataaaga	168846	-	-	-	situs ambiguus(内臓不定位)
14904	PGLYRP	NM_005091.1	341	tggagaagacgggctcgtataag	168849	-	-	peptidoglycan recognition	-
14905	PLAB	NM_004864.1	899	gtgtcgtccagaccctatgatga	168851	-	-	translation	atherosclerosis(粥状硬化症)
14906	PTN	NM_002825.4	566	ctggagctgagtgcaagcaaac	168857	-	-	phosphatase, protein	-
14907	SCGB1A1	NM_003357.3	151	atggacacacccctccagttatga	168861	-	-	phosphatase inhibitor	-
14908	SPP1	NM_000582.2	436	togaacgactctgatgataga	168873	-	-	steroid binding	-
14909	THPO	NM_000460.2	959	caggatcacgaactcttgaatg	168895	-	-	integrin binding	arthritis(関節炎)
						-	-	growth factor	essential thrombocythemia(本態性血小板血 症)、leukemia(白血病)
	TNFRSF11					-	-	receptor	arthritis(関節炎)
14910	B	NM_002546.2	1280	gggcctaattgacgcactaaagc	168921	-	-	cytokine	-
14911	TNFSF18	NM_005092.2	241	ctgaacctctctgctggaataag	168932	-	-	-	-
14912	BDNF	NM_001709.3	510	cagaagctcggcccaataaaga	168957	-	-	-	-
14913	CECR1	NM_017424.2	1253	tgggttaagctgccttactctt	168997	-	-	-	-
14914	DKK1	NM_012242.1	160	ggagctaccgggtgttctg	169005	-	-	-	-
						-	-	kinase related, signal transduction	-
14915	EDN2	NM_001956.2	522	gggagcctcgtgctcacacattcc	169014	-	-	toxin	-
14916	FGF1	NM_000800.2	504	ttggtttgtggcctcaagaaga	169025	-	-	-	prostate cancer(前立腺癌)
14917	FGF11	NM_004112.2	799	agggaaacccgaggttaagaagacc	169035	-	-	growth factor	-
14918	FGF12	NM_004113.3	303	atgacaccagatgtgtaccattga	169037	-	-	-	-
14919	FGF13	NM_004114.2	993	gtggctatccaaaggagttcaaac	169059	-	-	-	-
14920	FGF14	NM_004115.2	206	aggggtatagtgaccaggttatat	169068	-	-	-	-
14921	FGF18	NM_003882.1	558	ctgcacttgctgtgtttacact	169095	-	-	-	-
14922	FGF19	NM_005117.2	1000	caggggccacttggaatctgaca	169098	-	-	growth factor	-
14923	FGF2	NM_002006.2	777	tgaacgattggaactaataaac	169104	-	-	-	-
14924	FGF20	NM_019851.1	444	cagtgagactggtcagttattaga	169112	-	-	growth factor	-
14925	FGF21	NM_019113.1	256	tgaagccggaggtatttcaaat	169125	-	-	growth factor	-
14926	FGF22	NM_020637.1	241	gtggcgctgtggtatcacaagc	169127	-	-	growth factor	-
14927	FGF23	NM_020638.2	627	aggaacgagatccccctaatca	169133	-	-	growth factor	-
						-	-	-	-
14928	FGF3	NM_005247.2	824	cagcccgagtcgagtttctgg	169138	-	-	growth factor	melanoma(メラノーマ)、head and neck squamous cell carcinoma(頭頸部扁平上皮細胞癌)、 squamous cell cancer(扁平上皮癌)
14929	FGF4	NM_002007.1	819	acgctacgagtcctactacaagtac	169140	-	-	growth factor	melanoma(メラノーマ)、head and neck squamous cell carcinoma(頭頸部扁平上皮細胞癌)、 squamous cell cancer(扁平上皮癌)

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14930	FGF5	NM_004484.2	477	tggatccaccgaagccaattatgt	169145	-	see also 3021 line	signal transduction, cell cycle	-	-	-
14931	FGF6	NM_020996.1	163	caggcaccgctgcccaacaacag	169162	-	-	growth factor	-	-	-
14932	FGF7	NM_002009.2	518	gtgagtactatattttagcttg	169170	-	-	growth factor	-	-	-
14933	FGF8	NM_006119.2	677	gcgtgagtcacacttaagaac	169185	-	-	-	-	-	breast cancer(乳癌)、prostate cancer(前立腺癌)
14934	FRA	NM_024816.1	1161	gtgcctgcaccatgagtaaacg	169211	-	-	-	-	-	-
14935	GDNF	NM_000514.2	551	ttgtgcttaactgcaatacatt	169216	-	see also 393 line	-	-	-	-
14936	GRP	NM_002091.3	227	ctggcggtaggggcacttaatgg	169229	-	signal transduction	growth factor	-	-	-
14937	IGF1	NM_000618.2	181	cagttctccaccacaattatta	169237	-	-	peptide hormone	-	-	hepatocellular carcinoma(肝癌)、thyroid cancer(甲状腺癌)、colorectal cancer(大腸癌)、breast cancer(乳癌)、growth retardation with sensorineural deafness and mental retardation(感音難聴と精神遅滞を伴う成長遅延)、lung cancer(肺癌)、prostate cancer(前立腺癌)、pygmy dwarfism(小人症)、colorectal
14938	INHBE	NM_031479.3	720	ctggcgtggcaccacttaactct	169245	-	-	inhibin	-	-	-
14939	LOC14595	NM_138573.1	388	ttggcggctctctagtaacacttat	169261	-	-	-	-	-	-
14940	MIA	NM_006533.1	329	cagcgttcaggagagattactatg	169269	-	-	growth factor	-	-	melanoma(メラノーマ)
14941	NDP	NM_000266.1	522	ctgcacagggcaccacattatgtgg	169274	-	-	-	-	-	Coats disease(コーズ病)、exudative vitreoretinopathy(滲出性硝子体網膜症)、Norrie disease (pseudoglioma)(偽網膜腫)
14942	NGFB	NM_002506.1	827	tggcggttttacggatagatac	169285	-	-	growth factor	-	-	-
14943	NRG1	NM_013902.1	1295	tggcaatcaaacgctacatctaca	169338	-	-	kinase related	-	-	schizophrenia(精神分裂病)
14944	NRG2	NM_004883.1	689	cgggtcgggtggcggttgtaaacg	169339	-	-	apoptosis, signal transduction	-	-	-
14945	NTF3	NM_002527.2	527	cgggtacgcggagcagataagagta	169376	-	see also 1629 line	-	-	-	-
14946	NTF5	NM_006179.3	528	cagtcctctccgcagtaactttct	169387	-	-	growth factor	-	-	-
14947	OGN	NM_014057.2	842	aagtcctacgtgtaattcatcttc	169428	-	see also 5474 line	-	-	-	-
14948	PDGFC	NM_016205.1	1235	cagctgcacacctgtaactttct	169456	-	cell cycle	-	-	-	-
14949	PGF	NM_002632.3	601	ctgctcggcgcatgagaattctgc	169464	-	signal transduction, cell cycle	heparin binding	-	-	atherosclerosis(粥状硬化症)、arthritis(関節炎)
14950	PROK1	NM_032414.1	62	gtgcacacgcggctcctaactatg	169468	-	cell cycle	growth factor	-	-	-
14951	RABEP1	NM_004703.2	1705	tggttatcgttttagtttagtga	169508	-	see also 3222 line	-	-	-	-
14952	SCDGF-B	NM_025208.2	253	gagcgcattccatcaagctttgc	169537	-	-	-	-	-	-
14953	SCGF	NM_002975.2	368	gagaaatctctcgggaactgttga	169560	-	-	-	-	-	-
14954	TFF1	NM_003225.1	241	gtgcttctatcttaataaccatgc	169563	-	-	translation	-	-	breast cancer(乳癌)、pancreatic cancer(膵臓癌)
14955	VEGFC	NM_005429.2	1414	tggggccaaccgagaatttgatg	169583	-	see also 3790 line	-	-	-	-
14956	VGf	NM_003378.2	707	caggaaactgcgagatttcagctcc	169593	-	-	growth factor	-	-	-
14957	ADCYAP1	NM_001117.2	507	aaggacgcggaatgagctattttg	169604	-	gpcr	neuropeptide hormone	-	-	-

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14958	ASMT	NM_004043.1	468	cggctcagccgcgacgtcaccaatgc	169611	-	-	hematopoietic-associated factor 1A complex	-
14959	CORT	NM_001302.1	169	cggccgagacagcagacatatgc	169618	-	-	neuropeptide hormone	-
14960	CRH	NM_000756.1	383	ccgcattggagaggagctactcc	169620	-	signal_transduction	translation	Alzheimer disease(アルツハイマー病)
14961	GAL	NM_015973.2	435	atgcaccaaatcattgagttct	169622	-	signal_transduction	neuropeptide hormone	Alzheimer disease(アルツハイマー病)
14962	GALP	NM_033106.1	353	acgtttgccaaaccagagattgg	169626	-	signal_transduction	neuropeptide hormone	-
14963	NPY	NM_000905.2	235	cggcgctgcgcacactacatcaac	169628	-	gpcr、receptor_activity、signal_transduction	Smad3/Sp-1 heterodimer	atherosclerosis(粥状硬化症)、elevated plasma LDL(血漿リポタンパク増加)、alcoholism(アルコール依存症)
14964	NTS	NM_006183.3	513	aaggagaagtcataaagagaaa	169634	-	signal_transduction	peptide hormone	alcoholism(アルコール依存症)
14965	TAC1	NM_003182.1	211	aggagcaatgatcgtgaatt	169652	-	see also 2157 line	-	-
14966	PTH	NM_000315.2	129	aagacatggctaaagtattgatt	169671	-	apoptosis、signal_transduction、gpcr	translation regulator	hyperparathyroidism(副甲状腺機能亢進症)、hypocalcemia(低カルシウム血症)
14967	PTHLH	NM_002820.2	462	agggaagtcctccacagattta	169684	-	-	VDR/RXR alpha heterodimer	humoral hypercalcemia of malignancy(悪性カルシウム過剰血症)、non-small-cell lung cancer(非小細胞肺癌)
14968	GNRH1	NM_000825.2	1241	cagaaacccaacgcttcgaatgc	169689	-	-	luteinizing hormone-releasing factor	adrenal hyperplasia(副腎皮質過形成)、familial idiopathic hypogonadotropic hypogonadism(家族性特発性低ゴナドトロピン性機能低下症)
14969	TRH	NM_007117.1	321	cgcgcgccagatcttctcaatct	169693	-	signal_transduction	thyrotropin-releasing hormone	-
14970	ADM	NM_001124.1	230	atgctcgctcggaatttcgaaag	169696	-	signal_transduction	peptide hormone	-
14971	AGT	NM_000029.1	1189	ctggtgctgcaaggatcttatga	169702	-	signal_transduction	USF43/USF44 complex	essential hypertension(本態性高血圧)
14972	APM1	NM_004797.1	376	tgggattggagacttaacttact	169707	-	-	hormone	atherosclerosis(粥状硬化症)
14973	CALCA	NM_001741.1	383	acgttcccccaactgcaattgg	169714	-	gpcr	peptide hormone	-
14974	CKK	NM_000729.2	285	ctggacgaatgtccatctgtaag	169716	-	signal_transduction	peptide hormone	Parkinson disease(パーキンソン病)、Ewing's sarcoma(ユーイング肉腫)、peripheral neuroepithelioma(末梢神経上皮腫)
14975	CGA	NM_000735.2	412	cggcgctgcactgcagtaattgt	169726	-	signal_transduction	Thyroid hormone receptor beta-2	-
14976	COPA	NM_004371.2	2133	gggaccacgggatcttcgaact	169762	-	see also 2933 line	-	-
14977	FLJ14800	NM_032840.1	1098	coggaaactgcgggaatgtcatgt	169816	-	kinase related、receptor_activity	-	-
14978	FSHB	NM_000510.1	102	atgtcgtttctgataagcatca	169819	-	signal_transduction	glycopeptide hormone	bladder cancer(膀胱癌)
14979	GCG	NM_002054.2	474	aggccgagagagcagagatttcc	169832	-	see also 1328 line	-	-
14980	GH2	NM_002059.3	544	ctggcagatcttcaatcagtc	169840	-	-	-	-
14981	GIP	NM_004123.1	400	tggccagtcaagctaatagaag	169844	-	signal_transduction	peptide hormone	-



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14982	GPB5	NM_145171.2	107	gtgcoctgaggagatttcttc	169848	-	-	-	-	-	-	-
14983	GPHA2	NM_130769.2	280	cagtgtaaccgacacacacatca	169850	-	-	-	-	-	-	-
14984	GRTP1	NM_024719.1	507	acgaagctcgaagatttcttc	169859	-	-	-	-	-	-	-
14985	HAMP	NM_021175.1	248	cggctgctgcatcgatcaaaagt	169870	-	-	-	hormone	arthritis(関節炎)	-	-
14986	IAPP	NM_000415.1	303	ttggcgccattctctctcatctacc	169873	-	-	apoptosis, signal_transduction	structural molecule translation	diabetes mellitus(糖尿病), diabetes(糖尿病), atherosclerosis(粥状硬化症), proinsulinemia(ブ ロインスリン血症), diabetes(糖尿病), obesity(肥 満)	-	-
14987	INS	NM_000207.1	173	cgggaacacgagctctcttctaca	169879	-	-	signal_transduction	regulator	-	-	-
14988	INSL4	NM_002195.1	151	ctgagccaaactccttagagaag	169881	-	-	signal_transduction	peptide hormone	-	-	-
14989	INSL5	NM_005478.3	406	atggctgtccatgactgatttg	169910	-	-	-	peptide hormone	-	-	-
14990	INSL6	NM_007179.2	580	tagcatgcatgctcttccatata	169922	-	-	-	peptide hormone	-	-	-
14991	LEP	NM_000230.1	360	gagaaacctccgggactcttctca	169932	-	-	signal_transduction	hormone	atherosclerosis(粥状硬化症), diabetes mellitus(糖尿病), obesity(肥満), diabetes(糖尿	-	-
14992	LRSAM1	NM_138361.2	1088	gggcccacaggacagattctcaag	169940	-	-	-	-	-	-	-
14993	MGC45438	NM_152459.2	911	cagatggccacgactcttctgt	169954	-	-	-	-	-	-	-
14994	NPPA	NM_006172.1	283	gtgctcagtagcccgaaagaaga	169958	-	-	-	peptide hormone	-	-	-
14995	PPY	NM_002722.1	59	ctgcgtgctctgttactacagc	169961	-	-	-	peptide hormone	-	-	-
14996	RETNLB	NM_032579.1	230	cagtcctctctctataagcaaga	169988	-	-	-	molecular_function unknown	-	-	-
14997	RLN1	NM_006911.2	209	aaggcagatgttaataattatg	169973	-	-	signal_transduction	peptide hormone	-	-	-
14998	SRP	NM_033199.2	318	cggcctcttgacagacttacttg	169987	-	-	-	adrenocorticotropi	-	-	-
14999	SS18L1	NM_015558.3	944	ggatccacgcagcactactatga	169991	-	-	see also 6471 line	-	-	-	-
15000	STG1	NM_003155.1	516	ttgtacagcgtgctctaaattga	169995	-	-	signal_transduction	glycopeptide hormone	-	-	-
15001	STC2	NM_003714.1	1006	aagaacgaacagctcagattctot	170008	-	-	signal_transduction	glycopeptide hormone	-	-	-
15002	TG	NM_003235.3	888	cggttctctgcagtcacatcagt	170024	-	-	see also 2185 line	-	-	-	-
15003	UCN3	NM_053049.1	371	tgagcgtcccccacacacatcatg	170154	-	-	-	hormone	-	-	-
15004	UTS2	NM_006786.2	294	caggatttctctggacacagatcc	170163	-	-	-	-	-	-	-
15005	ADAM11	NM_002390.2	2164	ggggagacggagagagataaagg	170184	-	-	signal_transduction	-	-	-	-
15006	ADAM2	NM_001464.2	404	tggactcagggggcgtactacagt	170201	-	-	-	metalloendopeptida se	-	-	-
15007	ADAM22	NM_004194.2	760	tctcgatatacctcgtgaatgtag	170276	-	-	-	-	-	-	-
15008	ADAM23	NM_003812.1	1913	gtgaacgagtgatgattactga	170390	-	-	-	-	-	-	-
15009	ECM2	NM_001393.1	1608	atgctattgactacggtataac	170445	-	-	-	-	-	-	-
15010	ICAM2	NM_000873.2	116	aggatcggatgagaagattctcg	170463	-	-	-	integrin binding	-	-	-
15011	ICAM3	NM_002162.2	1504	ctggagcgtgtgactactctgtact	170488	-	-	-	integrin binding	-	-	-
15012	ICAM4	NM_001544.2	518	atggaagccgggtcatctattcc	170492	-	-	-	-	-	-	-
15013	TGFBI	NM_000358.1	1347	ttgcttcggaaccacataataa	170521	-	-	-	structural molecule	corneal stromal dystrophy(角膜変性症)	-	-
15014	DOK4	NM_018110.2	596	gagtggtacaagacacatcttgt	170533	-	-	kinase_related	-	-	-	-
15015	DOK5	NM_018431.2	773	cggcggatggacgtgactactac	170557	-	-	see also 7469 line	-	-	-	-
15016	FRS3	NM_006653.3	405	ccgtccgcgtggccttatctctgc	170603	-	-	receptor_activity, signal_transduction	-	-	-	-

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15017	IRS4	NM_003604.1	752	cggcggagccacccttctataaa	170630	receptor_activity, signal_transduction	-	-
15018	MGC20785	NM_152721.1	854	gcggctccagcagctatgattca	170706	kinase_related	-	-
15019	CD4	NM_000616.2	382	atgatcgcgctgactcaagaaga	170709	receptor_activity, signal_transduction kinase_related	transmembrane receptor	rheumatoid arthritis(関節リウマチ)、T cell OKT4/CD4 deficiency(T細胞欠損症)
15020	TLR8	NM_016610.2	1061	ttgacccaacttgatacctataa	170760	receptor_activity, kinase_related	-	-
15021	PDYN	NM_024411.2	691	atggagactggcacactctatct	170846	signal_transduction	-	-
15022	REA	NM_007273.3	404	ttggttcagtaaccattatct	170852	receptor_activity, transcription_regulat or	-	-
15023	BID	NM_001196.2	203	caggagatgagtcacacaaacc	170869	apoptosis	-	-
15024	GPRC5D	NM_018654.1	96	tggcatcgtggtcacaattctgc	170876	gpcr, receptor_activity, signal_transduction	-	-
15025	BZRAP1	NM_004758.1	2164	aggtctcttagcacgttatagc	170900	-	-	-
15026	ALCAM	NM_001627.1	602	ttgaaggagcgttggtcataatt	170941	see also 1080 line	-	-
15027	ALS2CR3	NM_015049.1	757	ctggaaactcgtcgtcgaattgg	170987	see also 6208 line	-	-
15028	ANGPT1	NM_001146.3	1617	cgagcactattcacagtatgaca	171061	see also 727 line	-	-
15029	ANGPT2	NM_001147.1	1233	atggcatctacacgttaacattc	171094	signal_transduction	receptor binding	neuroblastoma(神経芽細胞腫)
15030	ANGPTL1	NM_004673.3	1125	cagggtggtgcacacatatcc	171133	-	-	-
15031	ANGPTL2	NM_012098.2	596	gggctcgcaagagagagttcattt	171165	see also 5129 line	-	-
15032	APOB	NM_000384.1	1468	acggcgtcaacaactatcataag	171197	signal_transduction	specific RNA polymerase II transcription factor	hypercholesterolemia(高コレステロール血症)、 atherosclerosis(粥状硬化症)、acanthocytosis(有 棘赤血球舞踏病)、familial hypobetalipoproteinemia(家族性低ベータリポタン 血症)、normotriglyceridemic abetalipoproteinemia(正常トリグリセリド性無βリ poroteinemia(粥状硬化症)、Alzheimer disease(アルツハイマー病)、 hyperlipoproteinemia(高リポ蛋白血症)、 alcoholism(アルコール依存症)、Parkinson disease(パーキンソン病)、schizophrenia(精神分裂 症)
15033	APOE	NM_000041.1	320	aggagattgaaggcctacaaatcg	171585	-	translation regulator	-
15034	APOF	NM_001638.1	970	gggggtggccataatcaagagc	171604	-	receptor binding	-
15035	APOI2	NM_030882.2	399	cagagagaatctgctacaactgc	171607	-	-	Alzheimer disease(アルツハイマー病)、 schizophrenia(精神分裂症)
15036	ASIP	NM_001672.2	165	ttgtggcgtgacacagaatctcc	171608	signal_transduction	receptor binding	obesity(肥満)
15037	C17	NM_018659.1	205	caggctgacttgacatacaca	171610	signal_transduction	-	-
15038	C3	NM_000064.1	3450	tgggtgattacggaacacaacacg	171649	signal_transduction gpcr	receptor binding	nephritis membranoproliferative(膜性増殖性糸球 体腎炎)
15039	CD1D	NM_001766.2	1456	gggcttaccctccggttaaga	171683	receptor_activity	receptor binding	-
15040	CD72	NM_001782.1	804	ctgtccgtcggtggatgataatgc	171688	receptor_activity	receptor binding	-

图 46 (续九)

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15073	CPNE3	NM_003909.1	1258	gaggcgatagtggtctgtcttc	172602	-	see also 2668 line	
15074	PEPP2	NM_019012.2	1913	atgcacagtaagccgattatgt	172682	-	see also 7661 line	
15075	PIK3R1	NM_181504.2	319	tggtagagatggctctactaaa	172719	-	kinase_related	
15076	PIKHA4	NM_020904.1	1891	caggagctgggcaacttaagaga	172803	-	-	
15077	PSCD3	NM_004227.3	253	cagagatcgacaacttaacttc	172810	-	receptor_activity transcription_regulat or, signal_transduction , gpor	phosphatidylinosito l binding
15078	TULP3	NM_003324.2	1271	atgaccctgattatagtcattg	172841	-	see also 5658 line	phosphatidylinosito l binding
15079	DAPP1	NM_014395.1	722	cagctgtacaaatcgattattca	172855	-	-	-
15080	LYPLA3	NM_012320.2	447	aagcagcgtgggttcctattcc	172866	-	-	-
15081	OSBPL1A	NM_018030.3	1457	ctgctgtgtgcataatacatgg	172900	-	-	-
15082	PAFAH2	NM_000437.2	762	cagcgggtaagcggagttttacg	172970	-	-	atherosclerosis(粥状硬化症) platelet-activating factor acetylhydrolase deficiency(血小板活性化因子アセチル加水分解酵素欠乏症)
15083	PLA2G7	NM_005084.2	446	aggcgacattcttgcgtttatat	172995	-	-	-
15084	PLEKHA1	NM_021622.2	1901	tttgtggctgaccatcattact	173038	-	see also 8151 line	-
15085	PLEKHA3	NM_019091.2	760	aagatagccaatgccaaagttaa	173067	-	-	-
15086	RASAL1	NM_004658.1	558	ctgacagcaggaggtacacagc	173073	-	-	phospholipid
15087	SDPR	NM_004657.3	589	ccgaagcaaccattccaagtgc	173092	-	-	-
15088	SEC14L2	NM_012429.1	261	ctgccgaatccagatgaactatt	173100	-	transcription_regulat or	translation regulator
15089	SYT1	NM_005639.1	942	gggtggctctatccgactcattg	173131	-	see also 3914 line	-
15090	FABP2	NM_000134.2	256	tgggtcaccttattattacaacc	173142	-	-	lipid transporter
15091	FABP3	NM_004102.2	79	gtggacagcaagaatttggatga	173146	-	-	lipid transporter
15092	FABP4	NM_001442.1	390	gtgggtgaatgcgtcatgaagg	173158	-	-	transporter
15093	FABP6	NM_001445.1	194	tgggattctcagcggatgtaatcg	173163	-	-	transporter
15094	RBP3	NM_002900.1	3574	cggagggttcacactatatactg	173185	-	see also 1939 line	-
15095	ALB	NM_000477.3	881	gggaggaccttgccaagtatact	173202	-	-	atherosclerosis(粥状硬化症)、analbuminemia(無アルブミン血症)、dysalbuminemic
15096	APOA4	NM_000482.2	200	caatgatgtggactacttaagc	173229	-	-	hyperthyroxinemia(高サイロキシン血症)、 hyperzincemia(高亜鉛血症)
15097	APOA5	NM_052968.2	979	tcgcccagagattcaacaaca	173239	-	-	atherosclerosis(粥状硬化症)
15098	ATP5G1	NM_005175.1	164	ctgtgtgacagggtctcaatca	173250	-	-	-
15099	ATP5G2	NM_005176.3	60	atgttcgcctgcctcaagttgt	173253	-	-	lipid binding
15100	ATP5G3	NM_001689.1	372	gagggtctacggtatttaattg	173257	-	-	lipid binding
15101	BPI	NM_001725.1	614	ctggcgttgaaacaagaatgaac	173273	-	-	lipid binding
15102	BPI1	NM_025227.1	294	ttgagctactgtctgaaattgg	173291	-	-	-
15103	BPI2	NM_174932.1	839	ttgaatcgcgcgagattttctt	173313	-	-	-
15104	BPI3	NM_174897.1	598	atgggcaccgcaaatatttct	173344	-	see also 10124 line	-
15105	C20orf114	NM_033197.2	1118	aagcaatgggtgatcaatgaaa	173366	-	-	-

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15106	CE1P	NM_000078.1	1451	cggctcaggtagtattacagc	173396	-	-	Smad3/Sp-1 heterodimer	atherosclerosis(粥状硬化症)
15107	CRABP2	NM_001878.2	367	tggatggaggccctgaagagc	173407	-	signal_transduction	-	-
15108	CRBPV	NM_052960.1	107	ctggccctaggattgactttgc	173410	-	transcription_regulation	transporter	-
15109	EDG3	NM_005226.2	797	tcgagcggcacttgacaatgac	173415	-	see also 3663 line	transporter	-
15110	EDG5	NM_004230.1	821	tcgcgctctccaccctgaattcc	173435	-	receptor_activity, kinase_related, signal_transduction	-	-
15111	EDG6	NM_003775.1	251	tcggcagcctgggtctactattg	173439	-	receptor_activity, signal_transduction	-	-
15112	EDG7	NM_012152.1	695	acgtttctctccgcatacaagt	173447	-	receptor_activity, gpcr	-	-
15113	FABP1	NM_001443.1	347	ccgaactcaacggcgacataatc	173458	-	-	lipid transporter	-
15114	FABP7	NM_001446.3	400	gtgaccaaaccaacggtaattat	173462	-	-	lipid binding	-
15115	LBP	NM_004139.2	954	atgataccgcctgactctaata	173492	-	-	lipid binding	-
15116	LIPF	NM_004190.1	867	ttggatgtgtatctatcacataa	173523	-	-	triacylglycerol lipase	-
15117	PCTP	NM_021213.1	458	gggtgatccgggtgaagcaatc	173616	-	-	phosphatidylcholine transporter	-
15118	PITPN	NM_006224.2	638	tgggaagcgtatataatagacatt	173632	-	see also 4317 line	-	-
15119	PITPNB	NM_012399.2	307	gcgtaccactacttagaacaat	173651	-	-	phosphatidylinositol transporter	-
15120	PLIN	NM_002666.1	214	gagtgccaccctgcgaatgcttcc	173656	-	-	lipid binding	diabetes(糖尿病)
15121	PLTP	NM_006227.2	1248	ctgcgcaggttcggaatctattc	173670	-	-	-	atherosclerosis(粥状硬化症)
15122	PMP2	NM_002677.2	367	gagaggatcaactgaatcaagtgc	173679	-	-	transporter	-
15123	PSAP	NM_002778.1	742	ctggcatggccgacatatgcaag	173884	-	-	-	combined SAP deficiency (deficiency of SAPI and SAP2)(-), Gaucher disease(ゴ-シェ病)、metachromatic leukodystrophy(異染色性脳白質シストロフィー)
15124	RBP1	NM_002899.2	259	agagcaggtgacacatatgacatc	173695	-	-	lipid binding	-
15125	RBP2	NM_004164.2	216	tagcaattccgcaactatgatg	173703	-	-	transporter	-
15126	RRAGC	NM_022157.2	1178	cigaaagcgtcgacacacacatgg	173742	-	see also 8315 line	-	-
15127	SCP2	NM_002979.2	1606	atgggtctcgtctatgaagttaaa	173780	-	-	sterol carrier	Zellweger syndrome(ツェルウェガー症候群)
15128	SEC14L3	NM_174975.2	448	ttgagaccatcgtgatgatattt	173795	-	-	-	-
15129	SEC14L4	NM_174977.2	643	aagaatttaattgttctcgagc	173814	-	-	-	-
15130	STAR	NM_000349.1	168	cagacacatgcgcacacatgaagg	173815	-	-	transcription co-activator	lipoid congenital adrenal hyperplasia(副腎皮質過形成)
15131	STARD3	NM_006804.2	1394	ggggccacattgttgatttgc	173835	-	see also 4784 line	-	-
15132	STARD4	NM_139164.1	299	caggcccttgctgttggattgg	173842	-	-	-	-
15133	STARD6	NM_139171.1	255	caggatttgatggacacattca	173869	-	-	-	-

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15134	CD209	NM_021155.2	1098	ctggaacgacacaaatgtaac	173896	-	receptor_activity	-	-
15135	LMAN2L	NM_030805.1	160	gggtcaaacgttgagtaactga	173903	-	-	-	-
15136	MBL2	NM_000242.1	109	tggcagcgtcttactcagaact	173921	-	-	opsonin	recurrent infections, predisposition(-) juvenile rheumatoid arthritis(若年性慢性関節リウマチ)
15137	APCS	NM_001639.2	356	ttggagagatagtctatacaatt	173939	-	-	structural molecule	-
15138	ASGR1	NM_001671.2	701	ctggcctgaacccgacaaactact	173944	-	receptor_activity	lectin	-
15139	ATRN	NM_012070.2	2424	gggtcggccttcagagaagatcaat	174014	-	see also 5106 line		
15140	BCAN	NM_021948.3	824	aggctctgcccgcgtatgctttc	174047	-	-	-	-
15141	C14orf27	NM_175060.1	1002	cagctcccgatctcagttacttg	174061	-	-	-	-
15142	C21orf63	NM_058187.3	1573	gggaactgtcggggcttctgtagg	174094	-	-	lectin	-
15143	CD207	NM_015717.1	801	tggattggcctgactaaagcagg	174113	-	-	-	-
15144	CD209L	NM_014257.2	1105	gtggctggaacgacaatcagatg	174117	-	receptor_activity	-	-
15145	CD22	NM_001771.1	560	tgggtatccgatccaatgcagt	174129	-	-	lectin	-
15146	CD33	NM_001772.1	1067	aggacacctccaccgaatactca	174167	-	receptor_activity、 signal_transduction	receptor	leukemia(白血病)
15147	CD69	NM_001781.1	287	caggccaatacacattctcaatg	174172	-	receptor_activity、 signal_transduction	transmembrane receptor	-
15148	CHODL	NM_024944.2	862	tggggctccctacatttaccagt	174181	-	-	lectin	-
15149	CHST4	NM_005769.1	1037	cagaactcccaatgtatgaatt	174205	-	-	-	-
15150	CLEC1	NM_016511.2	363	aggaaatacgtcccaagattgc	174219	-	-	-	-
15151	CLEC2	NM_016509.1	574	gaggatgctcgtttatctcaga	174237	-	receptor_activity、 signal_transduction	-	-
15152	CLECSF1	NM_005752.1	482	atggtcacggaaggcgaatttgt	174248	-	-	lectin	-
15153	CLECSF11	NM_130441.1	1021	atgagcgttgctcgataataaat	174268	-	-	-	-
15154	CLECSF12	NM_022570.3	194	tggataactactaattaaacttgc	174274	-	receptor_activity	-	-
15155	CLECSF13	NM_006344.1	489	cagcagcttggaagaaacgatatg	174304	-	-	-	-
15156	CLECSF13	NM_173335.1	546	aaggatgccactacattgagttt	174323	-	-	-	-
15157	CLECSF2	NM_005127.2	860	cgcgaactaactataattgacaac	174356	-	-	lectin	-
15158	CLECSF5	NM_013252.2	679	gtgcgacattggcctacaacaaag	174374	-	receptor_activity、 signal_transduction	-	-
15159	CLECSF6	NM_016184.2	848	gagcgtcgttgtgtctaaattt	174384	-	receptor_activity、 signal_transduction	-	-
15160	CLECSF8	NM_080387.4	596	ctgtatagaagcgtttctctattt	174406	-	-	-	-
15161	CLECSF9	NM_014358.1	608	gtggacggcacacaccttgacaaa	174422	-	-	-	-
15162	CLL-1	NM_138337.2	365	aagcatgtttcacgttaacttga	174429	-	receptor_activity	-	-
15163	COLEC10	NM_006438.2	604	aggattcggggagggaatgctagc	174462	-	-	-	-
15164	COLEC12	NM_030781.2	686	aggcgtataatggcctatgtcagc	174488	-	receptor_activity	-	-
15165	CSAD	NM_015989.2	738	gagctctggggacggaattctct	174526	-	-	sulfinolamine decarboxylase	-
15166	DCL-1	NM_014880.3	664	cgcaccccaatcaccttataat	174549	-	receptor_activity	-	-
15167	DGCR2	NM_005137.1	953	ctgtacagagaagtcttctattc	174553	-	see also 3612 line		
15168	DTX2	NM_020892.1	2016	ctgcgggacacatcctcatagttt	174570	-	-	-	-
15169	FCN3	NM_003665.2	707	atgacgtcagccacgattcaagc	174576	-	-	-	-
15170	GCKR	NM_001486.2	282	ggagactacagcgaaatccattc	174582	-	-	sugar binding	-

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15171	GFPT1	NM_002056.1	577	ttgccagctcgttgatgatg	174615	-	see also 1329 line
15172	GFPT2	NM_005110.1	217	gtggcagatcgtgggaataatca	174655	-	see also 3581 line
15173	ITLN1	NM_017625.2	1010	cagcagcgtgagataactgagg	174706	-	-
15174	ITLN2	NM_080878.2	767	cogtatggctcaacgggaattgt	174714	-	-
15175	KLRB1	NM_002258.1	490	ctgatacgtacaaagcaattct	174742	-	receptor_activity、 signal_transduction
15176	KLRC1	NM_002259.2	503	gtgtaacagatagttgtttatcc	174758	-	receptor_activity、 signal_transduction
15177	KLRC4	NM_013431.1	473	tggagtagctggagcagaacaatt	174760	-	receptor_activity、 signal_transduction
15178	KLRC1	NM_002262.2	708	aagaactcatagcagataatcc	174775	-	receptor_activity、 signal_transduction
15179	KLRF1	NM_016523.1	573	acgtatggagattgggcttaacttt	174799	-	receptor_activity、 signal_transduction
15180	KLRG1	NM_005810.2	250	cgcgtggatgaataatggaacc	174812	-	receptor_activity、 signal_transduction
15181	KLRK1	NM_007360.1	757	aagaggacccagagattttac-taaa	174830	-	-
15182	LGALS1	NM_002305.2	373	cagatggatagcaaatccaagttc	174844	-	apoptosis、 kinase_related
15183	LGALS2	NM_006498.1	32	gggggaacttgaggttaagaaca	174847	-	galactose binding lectin
15184	LGALS4	NM_006149.2	186	aagcaggttctctgtgaactttgt	174851	-	galactose binding lectin
15185	LGALS8	NM_006499.2	1100	tggagcaactgtcgtcgttaaag	174879	-	galactose binding lectin
15186	LGALS9	NM_002308.2	926	tggtcagcaactgtttgaatact	174887	-	kinase_related
15187	LLT1	NM_013269.1	171	ttgctgttttaagcgcaataaga	174895	-	receptor_activity、 signal_transduction
15188	LMAN1	NM_005570.2	1361	ggggacacataataacttagtgc	174942	-	see also 3869 line
15189	LMAN1L	NM_021819.1	52	gtggtcaggttccttattctgc	174958	-	-
15190	LMAN2	NM_006816.1	777	cggcgaactgtctgacaatacag	174977	-	protein transporter
15191	LOC14390	NM_178834.2	1179	tagaggtctacaatgtcataaga	174992	-	-
15192	LPHN1	NM_014921.1	1084	ggggcgaagagaccacattgacc	175008	-	-
15193	LPHN2	NM_012302.1	936	tggcagggccataataataatag	175060	-	receptor_activity、 gpcr、 signal_transduction
15194	LPHN3	NM_015236.1	1204	ttgatttcggactagagataaag	175192	-	-
15195	LY6G5C	NM_025262.1	325	gagcagatgagtgattgttcaaa	175296	-	-
15196	LY75	NM_002349.1	4608	aagctgtccgttcttaccatattc	175444	-	-
15197	MAG	NM_002361.2	1199	gagcaaccggagccctattctca	175477	-	see also 1518 line
15198	MRC2	NM_006039.1	1442	cggcctcaacgattgaaactgc	175493	-	lectin
15199	NALP9	NM_176820.2	1408	agcaccacaaagcagactcaacc	175535	-	kinase_related、 receptor_activity
15200	NPTX2	NM_002523.1	806	gaggcaatagcgcctttaagta	175561	-	see also 1620 line

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图 46 (续)

15201	NRP3	NM_020645.1	441	caggctgcctataataotcatc	175584	-	-	-
15202	OLR1	NM_002543.2	248	gtctgaacctactaacacaaga	175588	-	receptor_activity	atherosclerosis(粥状硬化症)、Alzheimer disease(アルツハイマー病)
15203	PLA2R1	NM_007366.2	1001	aggaggtacgctgttaagtatta	175624	-	receptor_activity	-
15204	PRG2	NM_002728.3	447	tgtttccatcacaaacttoaat	175724	-	translation	-
15205	PRG3	NM_006093.2	472	ttcagaagctcagaatgtctgc	175733	-	-	-
15206	REG4	NM_032044.2	527	ggagaagccagccgatggattg	175746	-	-	-
15207	SELE	NM_000450.1	1236	gagcgaggtactcatgaattgtct	175774	-	Transcription factor p65 lectin	atherosclerosis(粥状硬化症)
15208	SELL	NM_000655.2	519	atgacgcctgccacaaaactaaag	175794	-	-	-
15209	SELP	NM_003005.2	1270	ctgtccacgggaagcagtgatgc	175828	-	Nuclear factor NF-kappa-B p50 subunit	atherosclerosis(粥状硬化症)、myocardial infarction(心筋梗塞)
15210	SFTPD	NM_003019.2	738	gaggccttacaggagcaagtaca	175856	-	surfactant	-
15211	SIGLEC10	NM_033130.2	480	gagagggaagctatgtgatatata	175859	-	-	-
15212	SIGLEC11	NM_052884.1	1353	tgggagctgccaccattcaaatg	175869	-	-	-
15213	SIGLEC6	NM_001245.2	1363	cagttccagacagcagcatagtttc	175880	-	-	-
15214	SIGLEC7	NM_014385.1	264	gggcaagggaatgatataagctgg	175881	-	receptor_activity	-
15215	SIGLEC8	NM_014442.1	406	aagaggagataagggtcatattt	175884	-	receptor_activity、signal transduction	-
15216	SIGLEC11	NM_033329.1	733	ctgtccagctcaacatatctctat	175896	-	-	-
15217	SN	NM_023068.2	2768	cagaggggacctcatctatctgttg	175921	-	lectin	-
15218	TNA	NM_003278.1	203	atgttgtgaacacaaagaatgtt	175936	-	lectin	-
15219	ZDHC19	NM_144637.2	846	cagcaactggatgtttaaccaattt	175941	-	-	-
15220	GHA	NM_021197.1	1027	cagcccattgagccaataatgc	175949	-	-	-
15221	CHIT1	NM_003465.1	1307	gggaacggtccagctcttacagc	175957	-	-	atherosclerosis(粥状硬化症)、chitotriosidase deficiency(キトリアシダーゼ欠損症)
15222	TACR1	NM_001058.2	740	gagctggtgcatgatcgaatgg	175967	-	see also 650 line	-
15223	TACR2	NM_001057.1	622	ctgcccgcctgggtgattgtt	175981	-	see also 649 line	-
15224	TACR3	NM_001059.1	689	caggatatggctattattgatc	175989	-	gpcr、receptor_activity、signal transduction	tachykinin receptor
15225	NPY1R	NM_000909.3	1434	aagcaagcccgagtcgcattaaa	176050	-	gpcr、receptor_activity	neuropeptide Y receptor
15226	NPY2R	NM_000910.2	1053	ccgggagtagttcgtcgtattgaga	176065	-	see also 592 line	-
15227	NPY5R	NM_006174.2	190	tagagctcgacgagtatataac	176080	-	see also 4270 line	-
15228	GPR66	NM_006056.2	547	ccgcacgcctaactgtttgagatgg	176108	-	receptor_activity、gpcr、signal transduction	-
15229	NMU2R	NM_020167.3	1266	gagctgaccgcaagatataggtcc	176126	-	receptor_activity、gpcr、channel	-
15230	GPR74	NM_004885.1	663	ctggccataagtgattactactagt	176150	-	receptor_activity、gpcr、signal transduction	-



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15231	HORTR2	NM_001526.2	514	gtgttcgtcgtggctctcattgg	176184	-	receptor_activity, gpcr, signal_transduction	orexin receptor	-
15232	OT7T022	NM_022146.1	549	cgtgaggagcaccacttcattgg	176221	-	gpcr, receptor_activity, signal_transduction	neuropeptide receptor	-
15233	SORCS3	NM_014978.1	1302	gtgaggaccacggatgatatgc	176236	-	receptor_activity, signal_transduction	-	-
15234	OPRM1	NM_000914.1	849	aggcaagggtccatagattgtac	176326	-	receptor_activity, gpcr, signal_transduction	mu-opioid receptor	alcoholism(アルコール依存症)
15235	OPRK1	NM_000912.2	620	tcgtgatcatccgatcacacaag	176338	-	gpcr, receptor_activity, signal_transduction	kappa-opioid receptor	-
15236	OPRD1	NM_000911.2	454	tcgtccggtacactaagatgaag	176357	-	gpcr, receptor_activity	delta-opioid receptor	alcoholism(アルコール依存症), melanoma(メラノーマ)
15237	QPR7	NM_005285.1	338	tggctatcgaccagtagacaaccc	176363	-	gpcr, signal_transduction	opioid receptor	-
15238	OGFR	NM_007346.2	251	gtgttagtctcgccacactatc	176368	-	receptor_activity	-	-
15239	OPCML	NM_002545.2	423	acgtccgggttcacctaagt	176383	-	receptor_activity	opioid receptor	-
15240	MC2R	NM_000529.1	192	tagctggccatctctgatatgc	176397	-	gpcr, receptor_activity	transcription co-activator	familial glucocorticoid deficiency(グルココルチコイド欠損症), adrenocortical cancer(副腎皮質癌)
15241	MC1R	NM_002386.2	1054	tcgcctggaccggtacatctcc	176408	-	gpcr, receptor_activity	melanocyte stimulating hormone receptor	melanoma(メラノーマ), dysplastic nevus syndrome(デイスプラスチック・ニーバス症候群)
15242	MC3R	NM_019888.2	1022	tgggaattgcgcacacaccttagg	176418	-	gpcr, receptor_activity	melanocortin receptor	diabetes mellitus(糖尿病), diabetes(糖尿病), obesity(肥満)
15243	MC4R	NM_005912.1	490	aagcgggtgggcatcataaag	176435	-	receptor_activity	see also 4133 line	-
15244	SSTR1	NM_001049.2	1024	tggacggtggtcaacatgttcacc	176460	-	gpcr, receptor_activity	somatostatin receptor	neuroblastoma(神経芽細胞腫)
15245	SSTR2	NM_001050.1	523	ttgcccacatgatataatctgg	176479	-	gpcr, receptor_activity	somatostatin receptor	neuroblastoma(神経芽細胞腫), small cell lung cancer(肺癌)
15246	SSTR3	NM_001051.1	603	ctggcggagcggcttcacatct	176486	-	gpcr, receptor_activity, apoptosis	somatostatin receptor	-
15247	AVPR2	NM_000054.2	1045	gaggatgacgctagtgattgtgg	176490	-	gpcr, receptor_activity, signal_transduction	vasopressin receptor	diabetes insipidus(尿崩症)
15248	OXTR	NM_000916.3	1539	agggaagcctggccttcacatc	176494	-	receptor_activity, gpcr	vasopressin receptor	-
15249	F2RL2	NM_004101.2	1215	ttgtgcctgggtagttcttaag	176532	-	receptor_activity, gpcr, signal_transduction	thrombin receptor	-

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15250	GP1BA	NM_000173.1	631	gagaactcgtgtatacaatacc	176539	-	receptor_activity, signal_transduction	thrombin receptor	giant platelet syndrome (Bernard-Soulier macrothrombocytopenia)(ペルナール・スリエ症 候群)、von Willebrand pseudohemophilia(フォン・ ウィルブランド病)
15251	FPR1	NM_002029.3	889	cagtcagaatccgtgattattg	176564	-	receptor_activity, gpcr, kinase_related,	N-formyl peptide receptor	-
15252	FPRL1	NM_001462.1	1205	gtgactcgtcggacctggattct	176572	-	gpcr, receptor_activity, signal_transduction	N-formyl peptide receptor	-
15253	FPRL2	NM_002030.3	1098	tggctcgttaacttccaagaaga	176599	-	gpcr, receptor_activity, signal_transduction	N-formyl peptide receptor	-
15254	GALR1	NM_001480.2	1702	caggaaaggcctataaacaagtgt	176609	-	receptor_activity, gpcr, signal_transduction	galanin receptor	-
15255	GALR2	NM_003857.2	1218	cagcatcctgacggttgatgttg	176615	-	gpcr, receptor_activity, signal_transduction	galanin receptor	-
15256	AGTR1	NM_000685.3	1174	ttgattcaactaggaactaatcgc	176644	-	gpcr, receptor_activity, signal_transduction	-	Alzheimer disease(アルツハイマー病)、essential hypertension(本態性高血圧)
15257	AGTR2	NM_000686.3	1095	ctgcgttaactcgtttctgtatt	176680	-	see also 429 line	-	-
15258	MAS1	NM_002377.2	273	ttgtctatcgactatgctttaga	176690	-	gpcr, receptor_activity, signal_transduction	angiotensin type II receptor	-
15259	EDNRA	NM_001957.1	669	atggctcaatgcacaaactattgc	176709	-	gpcr, receptor_activity, signal_transduction	endothelin receptor	-
15260	EDNRB	NM_000115.1	633	gcgaaacgggtcccaatatctga	176739	-	see also 97 line	-	Alzheimer disease(アルツハイマー病)
15261	CCKAR	NM_000730.1	670	atgactccgtatccccatttatag	176776	-	gpcr, receptor_activity	cholecystokinin receptor	diabetes mellitus(糖尿病)、alcoholism(アルコー ル依存症)、diabetes(糖尿病)
15262	CCKBR	NM_176875.2	328	cggagccgggacacagagaattgg	176788	-	-	phosphatidylinosito l 3-kinase, class I, regulator	-
15263	BDKRB1	NM_000710.2	1120	cagtcctcgaatccagtaattt	176810	-	receptor_activity, gpcr, signal_transduction	bradykinin receptor	-
15264	BDKRB2	NM_000623.2	1058	acggagcgcacatcatcgatgaac	176817	-	receptor_activity, gpcr, signal_transduction kinase_related	-	-
15265	BRS3	NM_001727.1	656	ctgcgtctggatcgctgtctatga	176842	-	see also 1148 line	bradykinin receptor	-

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15266	NMBR	NM_002511.1	998	atgtatoggtcttcoaactataa	176882	-	receptor_activity, gpcr	bombesin receptor	-
15267	C5R1	NM_001736.1	673	acgctacagattgttaacattt	176898	-	receptor_activity, gpcr, kinase related,	C5a anaphylatoxin receptor	-
15268	C3AR1	NM_004054.2	1090	togtggcaataaacagatcactagg	176932	-	gpcr, receptor_activity, signal_transduction	complement C3a receptor	-
15269	HCRT1	NM_001525.1	1097	gggtctcaatgtctcttaagagg	176941	-	receptor_activity, gpcr,	orexin receptor	-
15270	NTSR1	NM_002531.1	536	acgtgaacaccagacatctactcc	176942	-	gpcr, receptor_activity, signal_transduction	neurotensin receptor, G- protein coupled	-
15271	NTSR2	NM_012344.2	1064	cagagccatcgtgtgctgatgtg	176957	-	gpcr, receptor_activity, signal_transduction	neurotransmitter: odium symporter	-
15272	GRPR	NM_005314.1	1107	ctgatccagagtgcttacaattct	176982	-	receptor_activity, gpcr	bombesin receptor	autism(自閉症), non-small-cell lung cancer(非 小細胞肺癌)
15273	NPR3	NM_000908.1	1283	gagaccgataggagattctct	177000	-	see also 4773 line	peptide receptor, G-protein coupled	-
15274	BRAP	NM_006768.2	1158	atgtcagtcgacatgcttataag	177044	-	see also 1454 line	-	-
15275	KPNA3	NM_002267.2	1647	atgtaataccaccgtctctgta	177077	-	see also 1464 line	-	-
15276	KPNB2	NM_002270.2	283	aagatcattgagtgctcttct	177088	-	-	-	-
15277	TNPO2	NM_013433.2	1385	atgtctgtcgcactgggaatttg	177151	-	-	-	-
15278	KDEL1	NM_006801.2	436	aagttcaagctacttaccagagg	177166	-	receptor_activity	protein transporter	-
15279	KDEL2	NM_006854.2	563	gcgtagtcacagaccatcctatc	177183	-	receptor_activity	protein transporter	-
15280	PEX7	NM_000288.1	853	ctggcctcttgcctcgtatgatt	177204	-	see also 253 line	-	-
15281	PXR1	NM_000319.3	581	ccgatcgtcgtgatgaat	177220	-	see also 266 line	-	-
15282	SSR2	NM_003145.2	208	ctgcattagacgtggaactatct	177238	-	see also 2126 line	-	-
15283	SSR3	NM_007107.2	250	atgacccttagtaagacatattt	177254	-	see also 4952 line	-	-
15284	TOMM34	NM_006809.4	405	ctggcggcagacatgcttattga	177266	-	-	-	-
15285	NKTR	NM_005385.2	4092	acgcctagtcgggatgatgatg	177373	-	see also 3746 line	-	-
15286	PPIH	NM_006347.2	87	aggaaagttggcccatgaagatc	177402	-	-	-	-
15287	AAMP	NM_001087.1	300	tagcgaggtacacctttgcatg	177411	-	-	heparin binding	-
15288	APOH	NM_000042.1	308	atggagcgcgtacgctatcagact	177446	-	-	heparin binding	-
15289	COL5A1	NM_000093.2	1747	ggggagaccagcgattatcagc	177494	-	see also 68 line	-	-
15290	HBP17	NM_005130.1	422	gagagagctatttggaaacaagt	177515	-	signal_transduction	-	-
15291	HRG	NM_000412.2	121	aagctctagacctgatcaataaa	177521	-	-	thrombophilia due to HRG deficiency(ヘレグリン 欠損による血栓)	-
15292	LAMC2	NM_005562.1	1796	gtgtcagcttgcgaactgtaacc	177590	-	see also 3866 line	heparin binding	-
15293	LIPC	NM_000236.1	240	ctgtcagattcgaatcaatcatc	177618	-	-	triacylglycerol lipase	atherosclerosis(粥状硬化症), hepatic lipase deficiency(肝性リパーゼ欠損症)

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15294	LIPG	NM_006033.1	525	atggacgatgagcaggtatcttgg	177645	-	-	triacylglycerol lipase	atherosclerosis(粥状硬化症)
15295	LPL	NM_000237.1	1370	ttggagaactactcatgttggaag	177699	-	-	lipoprotein lipase	atherosclerosis(粥状硬化症)、 hyperlipoproteinemia(高リポ蛋白血症)
15296	ODZ1	NM_014253.1	6569	cagtgagctatagtaagatct	177888	-	see also 5559 line		
15297	SERPINC1	NM_000488.1	254	aggccaattccgcgtttgctaac	177925	-	-	Thyroid hormone receptor beta-2	thrombophilia due to antithrombin III deficiency(アンチトロンピン-III欠損による血栓)
15298	SERPIND1	NM_000185.2	951	aggatctcgtgggtgaataaattcc	177948	-	-	serpin	thrombophilia due to heparin cofactor II deficiency(ヘパリン・コファクター-II欠損による血
15299	SERPINE2	NM_006216.2	528	gtggctaaccgcgtgtttgttaa	177962	-	-	serpin	
15300	VTN	NM_000638.2	1820	aagtactaccagagtaactcttgc	178003	-	-	heparin binding	-
15301	HAPLN3	NM_178232.2	1172	gagccgttgtacaggttttact	178013	-	-	-	-
15302	HMMR	NM_012484.1	239	aagttaaagtctctgggaatcaag	178020	-	-	-	-
15303	IMPG2	NM_016247.1	3477	gtgtctgagccgtgataatagg	178144	-	see also 6751 line	-	-
15304	TM6SF2	NM_023002.1	661	gcgcgagcgtcagtgcaataacc	178156	-	-	-	-
15305	TNFAIP6	NM_007115.2	261	gcggccatctcgcaacttaacaag	178162	-	signal_transduction	-	-
15306	XLKD1	NM_006691.2	475	atggattcgtggctatctctagg	178186	-	-	damaged DNA binding	-
15307	DSPG3	NM_004950.2	964	aggaactagagagacattcgatg	178218	-	-	-	-
15308	HABP2	NM_004132.2	228	cagctacgagggattataatcagg	178224	-	-	-	-
15309	PODLX2	NM_015720.1	393	gagaaggcaggttcattgaaga	178249	-	-	-	-
15310	TGFBR3	NM_003243.1	1886	atggtgtggtctactataatcc	178285	-	receptor_activity、 signal_transduction	receptor	-
15311	GABRA1	NM_000806.3	397	cagccgtattacaagaatgaact	178306	-	see also 493 line	-	-
15312	GABRA2	NM_000807.1	1283	aggcttcctgtatgatacagaac	178377	-	channel、 receptor_activity、 signal_transduction	benzodiazepine receptor	Parkinson disease(パーキンソン病)
15313	GABRA4	NM_000809.2	990	cagttccgcgtagactgtattt	178438	-	see also 499 line	-	-
15314	GABRA5	NM_000810.2	1352	ttgccaggttcaattactttacc	178475	-	see also 502 line	-	-
15315	GABRA6	NM_000811.1	988	tcgcagcgtgtcaactcttacc	178517	-	see also 503 line	-	-
15316	GABRB1	NM_000812.2	1001	aagcagttgatatttctctgatg	178548	-	see also 504 line	-	-
15317	GABRB3	NM_000814.3	1496	aggatcgtgttccattcaattt	178616	-	see also 511 line	-	-
15318	GABRD	NM_000815.2	759	gcggcgtgtacatcatccaatcc	178622	-	channel、 receptor_activity、 signal_transduction	GABA-A receptor	-
15319	GABRE	NM_004961.2	1425	ctgcagtggtcccgattgtgagg	178657	-	channel、 receptor_activity、 signal_transduction	-	-
15320	GABRG1	NM_173536.2	807	ttgtagggttacggaactcaact	178691	-	channel、 receptor_activity、 signal_transduction	-	-
15321	GABRG2	NM_000816.2	592	tgttccagtggaactatcaata	178715	-	see also 512 line	-	alcoholism(アルコール依存症)
15322	GABRG3	NM_033223.1	160	aagacacccagcgtgactcttatt	178751	-	see also 9381 line	-	-

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15323	GABRP	NM_014211.1	986	ttggagtgaacacgctgttatca	178785	channel,			
15324	GABRQ	NM_018558.1	213	agggtgctgtcaagatacagatg	178806	receptor_activity	GABA-A receptor	-	
						see also 7524 line			
15325	GABRR1	NM_002042.2	357	aggttgacatggactttacgatg	178860	channel,			
						receptor_activity,	GABA-A receptor	-	
						signal_transduction			
15326	GABRR2	NM_002043.1	180	atgcccaagcccaagtcacttata	178873	channel,			
15327	GABBR1	NM_001470.1	742	gtgtacatcggggcactgtttcc	178884	receptor_activity,	GABA-A receptor	-	
15328	CHRM1	NM_000738.2	1289	tggctccgaagtggatcaaga	178923	signal_transduction			
						see also 1017 line			
						see also 479 line			
15329	CHRM2	NM_000739.1	514	gaggtgaggagtgctacattca	178937	gpcr,	muscarinic		
						receptor_activity	acetylcholine	-	
						receptor_activity,	receptor		
15330	CHRM3	NM_000740.1	202	gtgtcttcacgcctttttaac	178958	gpcr,	muscarinic		
						signal_transduction	acetylcholine	-	
15331	CHRM5	NM_012125.2	322	gggtattctaccacaatgaacc	178981	gpcr,	muscarinic		
						receptor_activity	acetylcholine	-	
15332	CHRNA1	NM_000079.1	123	ccgtctgttgccaagctattta	178994	channel,	nicotinic		
						receptor_activity,	acetylcholine-		
						signal_transduction	activated cation-		
							selective channel	myasthenic syndrome(筋無力症候群)	
15333	CHRNA2	NM_000742.1	1962	ctggaaaggtgtgcactacattgc	179010	channel,	nicotinic		
						receptor_activity,	acetylcholine-		
						signal_transduction	activated cation-		
15334	CHRNA3	NM_000743.2	717	cggcttcctgtctcctacgataagg	179020	channel,	nicotinic		
						receptor_activity,	acetylcholine-		
						signal_transduction	activated cation-		
15335	CHRNA4	NM_000744.2	1933	gtggaggcgtccagttacattgc	179045	channel,	nicotinic		
						receptor_activity,	acetylcholine-		
						signal_transduction	activated cation-		
15336	CHRNA5	NM_000745.2	639	ctggactccaccggcgaactaca	179061	channel,	nicotinic		
						receptor_activity,	acetylcholine-		
						signal_transduction	activated cation-		
15337	CHRNA6	NM_004198.2	302	ctcgtcacatcttggaatgatta	179099	channel,	nicotinic		
						receptor_activity,	acetylcholine-		
						signal_transduction	activated cation-		

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15338	CHRNA7	NM_000746.2	357	agggtgaagactgttcgtttcc	179129	-	see also 480 line	channel, receptor_activity, signal_transduction	nicotinic acetylcholine- activated cation- selective channel	-
15339	CHRNA1	NM_000747.1	1048	ttgggtcgtcagatcttcattc	179139	-		channel, receptor_activity, signal_transduction	nicotinic acetylcholine- activated cation- selective channel	epilepsy(てんかん)
15340	CHRNA2	NM_000748.1	926	acgtggacatcacgtatgacttc	179164	-		channel, receptor_activity, signal_transduction	nicotinic acetylcholine- activated cation- selective channel	-
15341	CHRNA4	NM_000750.1	771	cagctacgtggacgtgacttaag	179170	-		channel, receptor_activity, signal_transduction	nicotinic acetylcholine- activated cation- selective channel	-
15342	CHRNA5	NM_000751.1	86	ctgatccggcacctgtttcaaga	179175	-		channel, receptor_activity, signal_transduction	nicotinic acetylcholine- activated cation- selective channel	myasthenic syndrome(筋無力症候群)
15343	CHRNA6	NM_000752.1	239	tggaatcgttgacgagattacc	179185	-	see also 49 line	channel, receptor_activity, signal_transduction	nicotinic acetylcholine- activated cation- selective channel	-
15344	CHRNA10	NM_020402.2	409	cggccagacatgactactataa	179205	-		channel, receptor_activity, signal_transduction	nicotinic acetylcholine- activated cation- selective channel	-
15345	CHRNA9	NM_017581.1	197	cagattacgctctcgaagataa	179216	-		channel, receptor_activity, signal_transduction	nicotinic acetylcholine- activated cation- selective channel	-
15346	CHRNA3	NM_000749.2	254	atgggtcgcgcctgtattacatt	179258	-		channel, receptor_activity, signal_transduction	nicotinic acetylcholine- activated cation- selective channel	-
15347	GLRA1	NM_000171.1	297	atgtacagcttcaataactcttcg	179286	-		channel, receptor_activity, signal_transduction	glycine-inhibited chloride channel	startle disease(びっくり病)、diabetes(糖尿病)
15348	GLRA3	NM_006529.1	676	ggagacacatggattacagagt	179313	-	see also 4563 line	channel, receptor_activity, signal_transduction	sterol transporter	D-bifunctional protein deficiency(-)
15349	GLRB	NM_000824.2	1430	ttgaactaccaattatgactgc	179375	-	see also 522 line	channel, receptor_activity, signal_transduction	electron androgen binding	alcoholism(アルコール依存症)
15350	HTR3C	NM_130770.1	466	cagcagtggaagtggaattaagt	179397	-		channel, receptor_activity, signal_transduction	electron androgen binding	-
15351	C20orf79	NM_178483.1	336	ggcgtggaccatgctcgaaga	179408	-		channel, receptor_activity, signal_transduction	electron androgen binding	-
15352	HSD17B4	NM_000414.1	1353	aggatccggtgtgtgtgattata	179449	-		channel, receptor_activity, signal_transduction	electron androgen binding	-
15353	STOML1	NM_004809.3	296	ctgggttgcctcgaagattgtgc	179466	-	see also 3343 line	channel, receptor_activity, signal_transduction	electron androgen binding	-
15354	ALDH1A1	NM_000689.3	474	caggccggtacaataccaattga	179492	-		channel, receptor_activity, signal_transduction	electron androgen binding	-
15355	SCGB2A1	NM_002407.1	328	ttggtgtaatagaaggaatt	179536	-		channel, receptor_activity, signal_transduction	electron androgen binding	-
15356	SHBG	NM_001040.2	259	gggataccaaccctaagatga	179540	-		channel, receptor_activity, signal_transduction	electron androgen binding	-
15357	OSBP	NM_002556.2	1256	acgaacgagccacactctttagg	179551	-		channel, receptor_activity, signal_transduction	electron androgen binding	-

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15358	OSBPL5	NM_020896.2	1786	tcgagtgctgcaagaacaacttc	179592	-	see also 8019 line	-	-
15359	PGRMC1	NM_006667.2	545	ggaggtctcaggtcactttcaag	179594	-	receptor_activity	steroid binding	steroid hormone receptor
15360	PGRMC2	NM_006320.1	647	aagataccaaggaatcaacaataa	179598	-	-	steroid binding	steroid hormone receptor
15361	SOGB2A2	NM_002411.1	209	tagacacaaatgccactacaat	179600	-	-	steroid binding	steroid hormone receptor
15362	SERPINA6	NM_001756.2	976	agtgagacctgacattccaag	179611	-	-	steroid binding	steroid hormone receptor
15363	STE	NM_005420.2	662	gagtcacgtgtactattcttt	179630	-	-	steroid binding	steroid hormone receptor
15364	TTR	NM_000371.1	169	tggcgtgcatgtgttcagaag	179642	-	-	steroid binding	steroid hormone receptor
15365	DKFp547					-	-	-	-
15365	H025	NM_020161.1	445	gtgagggaggagcagtaataa	179647	-	-	-	-
15366	FOLR1	NM_000802.2	255	atgttctctacatatagattc	179652	-	receptor_activity	-	ovarian cancer(原発性卵巣癌)
15367	FOLR3	NM_000804.2	762	cggtctgtggagattatgattc	179662	-	receptor_activity	follicle acid binding	-
15368	FTCD	NM_006657.1	242	ccgggtagctcccgacttatog	179665	-	-	glutamate formimidoyltransferase	-
15369	GNMT	NM_018960.2	587	aagaacatctactataagagtg	179673	-	-	glycine N-methyltransferase	-
15370	SLC19A2	NM_006996.1	1055	cagacagctctctgtattgaaa	179709	-	see also 4881 line	-	-
15371	SLC19A3	NM_025243.2	431	gtggcctactacgctacatatata	179750	-	see also 8887 line	-	-
15372	RLBP1	NM_000326.3	1250	gggcacgctgcccaagatgatg	179791	-	see also 275 line	-	-
15373	SLC5A6	NM_021095.1	1609	tgggctgtttgtctaggaatgg	179802	-	-	sodium dependent multivitamin transporter	-
15374	TTPA	NM_000370.1	557	ctgtgtactacaggtatcattt	179825	-	-	transporter	atherosclerosis(粥状硬化症)、ataxia(運動失調)
15375	FKBP3	NM_002013.2	905	aggtcggagtaggcaagattatc	179853	-	see also 1291 line	-	-
15376	FKBP4	NM_002014.2	668	ttgcactggaggggtactacaag	179864	-	-	cyclophilin-type peptidyl-prolyl cis-trans isomerase	-
15377	FKBP5	NM_004117.2	289	acgccgatgattggagacaagt	179869	-	see also 2782 line	-	-
15378	FKBP6	NM_003602.2	903	aaggagacaaccctcaatcatga	179905	-	-	cyclophilin-type peptidyl-prolyl cis-trans isomerase	-
15379	PPID	NM_005038.1	185	ttgatgaattgtcttagaattg	179909	-	-	cyclophilin-type peptidyl-prolyl cis-trans isomerase	-
15380	APOL5	NM_030642.1	81	gtggcttcgaaggtaattctacg	179948	-	-	high-density lipoprotein binding	schizophrenia(精神分裂病)
15381	ANKRA2	NM_023039.2	1302	ctgtcgttgccctgtgtaaggg	179979	-	-	-	-
15382	SCARF1	NM_003693.2	845	tggccgctgcaaacacacatgagc	179993	-	receptor_activity	-	-
15383	LAG3	NM_002286.4	1383	ctgtcacattggcaatcatcaca	180008	-	-	antigen binding	-
15384	LILRA3	NM_006865.2	345	gggcgtgattgctgtatctatgg	180013	-	receptor_activity	-	-
15385	SLAMF1	NM_003037.1	207	caggtggcgcgatgatgaactgc	180016	-	receptor_activity	transmembrane receptor	rheumatoid arthritis(関節リウマチ)
15386	OTC	NM_000531.3	998	cagtattggctcgagtgataaa	180056	-	see also 402 line	-	-

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15387	PP591	NM_025207.2	1241	aggacactatcaaggaggataat	180081	-	-	-	-
15388	DIO1	NM_000792.2	329	ggagtttatcaaggtaataagg	180092	-	-	thyroxine	hyperthyroxinemia(高サイロキシニン血症)
15389	DIO2	NM_000793.2	763	ggccactagtggtcaactttg	180101	-	-	-	-
15390	SELENBP1	NM_003944.2	714	ctgtacggagagccacttatgt	180116	-	-	selenium binding	-
15391	15.Sep	NM_004261.2	322	gagtataaaccccaactgttca	180123	-	-	selenium binding	-
15392	SEPP1	NM_005410.1	453	atgtggcgtgtgtatcatc	180139	-	-	selenium binding	-
15393	ERAF	NM_016633.1	135	ctgaatcagcaggtttcaatga	180168	-	-	-	-
15394	HP	NM_005143.1	391	atgagtgtaacacttaaacat	180171	-	-	trypsin	-
15395	HPR	NM_020995.2	737	ctgaccaatacgtattgataacg	180177	-	-	trypsin	-
15396	PLUNC	NM_016583.2	784	tgtgtgatgacattgttaacatg	180190	-	-	-	-
15397	TLR4							receptor_activity, signal_transduction, kinase_related	rheumatoid arthritis(関節リウマチ), atherosclerosis(粥状硬化症)
15398	NOP5/NO	NM_003266.2	1475	tgggacaacccagcctaaagtatt	180234	-	-	-	-
15399	P58	NM_015934.3	1143	tagacgggatacccttaagtatg	180320	-	-	see also 6576 line	-
15399	AKR1C2	NM_001354.3	120	aagctctagaggccgtcaaatg	180327	-	-	oxidoreductase	-
15400	ALOX5AP	NM_001629.2	360	aagtaattgtcgtgttaactagg	180333	-	-	enzyme activator	atherosclerosis(粥状硬化症)
15401	AMBP	NM_001633.2	1015	ctgcatgggcaacgggtacaact	180349	-	-	see also 1082 line	-
15402	CGI-69	NM_016016.1	346	ctgtacacctgtgcccaaatggtgc	180353	-	-	binding	-
15403	CRP	NM_000567.1	341	ttggtctaagatatagatataca	180443	-	-	translation regulator	coronary heart disease(虚血性心疾患), colorectal cancer(大腸癌), atherosclerosis(粥状硬化症), colorectal cancers(結腸直腸癌)
15404	DKFZP434	NM_031291.1	891	gtgaggctaaacggcaataataa	180479	-	-	see also 9004 line	-
15405	DKFZp547							-	-
15405	P234	NM_153045.2	414	ctgtcttcogatttgacaataacc	180489	-	-	-	-
15406	DOC2A	NM_003586.1	129	gcgatcgcatgaccatcaacalc	180501	-	-	-	-
15407	FLJ10618	NM_018155.1	697	gtgttcgtaagtgatgcagaca	180524	-	-	-	-
15408	FLJ12687	NM_024917.4	1372	gtggagcagctactatgaagtatt	180549	-	-	see also 8805 line	-
15409	FLJ20551	NM_017875.1	1239	atggcgtggacgggtgtatgaaga	180595	-	-	-	-
15410	GIF	NM_005142.2	359	ggagccctggggataaaagtatoc	180603	-	-	see also 3613 line	-
15411	HEBP1	NM_015987.2	487	aagtctgtgttcogatttccaaac	180641	-	-	-	-
15412	HPX	NM_000613.1	995	agggaggctataccctagtaagc	180651	-	-	translation	-
15413	LOC15332	NM_145282.1	543	ggagtgaacacacagagatgactaca	180659	-	-	-	-
15414	LOC28313	NM_182556.1	562	ctgtcctgttgggtctatagc	180667	-	-	-	-
15415	LUZP1	NM_033631.1	1877	aagacaacacgaacgtttatga	180723	-	-	see also 9429 line	-
15416	MGFP	NM_018843.1	1251	agccctaattcctcgttaatta	180792	-	-	see also 7599 line	-
15417	MFTC	NM_030780.2	636	aaggtgcgtggattatataag	180814	-	-	see also 8944 line	-
15418	MGC34725	NM_173637.1	897	cggctacotgcccacatagctgc	180832	-	-	-	-
15419	MSCP	NM_016612.1	356	ggagagcgtcaacgctcatgaca	180834	-	-	-	-
15420	MTCH1	NM_014341.1	418	gtgcaagtggtatgtaagtagg	180849	-	-	channel, apoptosis, signal_transduction	-
15421	NALP14	NM_176822.2	310	tgttggcccgacagatagtagacc	180859	-	-	-	-
15422	SEC14L1	NM_003003.1	2282	aggtctcttggcacaagtgtataa	180962	-	-	see also 2015 line	-



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15423	SFRS16	NM_007056.1	415	cggacgaacggaagtgtactac	180978	-	-	-
15424	SLC25A1	NM_005984.1	846	gggcctggagcgccacaataacc	180992	-	-	citrate transporter
15425	SLC25A11	NM_003562.3	951	aagggttcacgccgtactatgc	181010	-	see also 2369 line	
15426	SLC25A14	NM_003951.2	584	aagcttgaagcgcgtatttcgtag	181022	-	see also 2699 line	
15427	SLC25A15	NM_014252.1	354	gggtaccagtcocagcactaatcg	181055	-	-	ornithine transporter hyperornithinemia-hyperammonemia-homocitrullinuria(オルニチン血症)
15428	SLC25A16	NM_152707.2	1345	aaggactctatcgtgttttatct	181102	-	-	solute;solute antiporter
15429	SLC25A17	NM_006358.2	831	agggttgggcgctcatagactaaa	181125	-	-	carrier
15430	SLC25A18	NM_031481.1	1407	gggattggagagcgcatcttaaa	181141	-	-	binding
15431	SLC25A19	NM_021734.3	709	acgccgtggggagaccatgatagg	181152	-	-	deoxynucleotide transporter
15432	SLC25A2	NM_031947.1	464	ctgtcgtgaagggtatccttaaa	181158	-	-	ornithine
15433	SLC25A20	NM_000387.2	232	gggggcatcacggggctatatcg	181170	-	-	lipid transporter
15434	SLC25A21	NM_030631.1	806	caggggcctcaacaagaaggattaac	181195	-	-	binding
15435	SLC25A26	NM_173471.1	318	gggggtatccaagggttgttatcg	181206	-	-	-
15436	SLC25A27	NM_004277.2	555	tggagcgtgaatgggtcacatgatg	181220	-	-	uncoupling protein
15437	SLC25A28	NM_031212.2	1424	aggttgggggtgacctcattttcc	181229	-	see also 8991 line	-
15438	SLC25A3	NM_002635.1	984	gggaactgtttgcccgctatcatca	181257	-	-	-
15439	SLC25A4	NM_001151.1	798	ctgttctcgtagaatgatgatg	181273	-	-	binding
15440	SLC25A5	NM_001152.1	730	ctgcctgttgcgggttgacttcc	181278	-	-	binding
15441	SLC40A1	NM_014585.3	1989	ttagcttgcctctatgtatttcaa	181321	-	see also 5765 line	-
15442	TCN1	NM_001062.2	889	gtgctcaggaataatttccaagg	181359	-	-	binding
15443	TCN2	NM_000355.2	890	cagcaccoccattggcattacagt	181380	-	-	vitamin B12 transporter
15444	TNC	NM_002160.1	4802	gggctaccocctagtactgattt	181431	-	see also 1385 line	macrocytic anemia(大球性貧血)
15445	UCP1	NM_021833.3	261	atgcccgacgctcccgltgtatta	181469	-	-	uncoupling protein
15446	UCP2	NM_003335.2	832	ggagggtgctggagataccaaacgc	181505	-	see also 2261 line	obesity(肥満)
15447	UCP3	NM_003356.2	965	cagccccctcgaactgtagataa	181510	-	-	-
15448	VWF	NM_000592.2	2751	tggctccggcatgagaaacagatgt	181534	-	-	obesity(肥満)
15449	ACR	NM_001097.1	59	gtgtccgtggttgctaagataa	181593	-	-	trypsin
15450	BF	NM_001710.3	1090	gtgtctagtcaacttaattgaga	181610	-	-	hematopoietic-associated factor
15451	C1RL	NM_016546.1	1156	tggagatgggctggctaactact	181651	-	see also 6912 line	1B complex
15452	C2	NM_000063.3	645	ctgccgcgaaccctactcttatg	181664	-	-	systemic lupus erythematosus(全身性エリテマトーデス)
15453	C6orf158	NM_153362.1	1138	caggtgtctccgaagaatccaatg	181717	-	see also 9992 line	trypsin
15454	CMA1	NM_001836.2	136	atggcctaccctggaattgtaac	181728	-	-	trypsin
15455	CRN	NM_006887.2	368	aagggtccgaltgtatttcttaca	181753	-	see also 4614 line	-
15456	CTRC	NM_007272.1	176	gtggcggacatttgattgtago	181827	-	-	trypsin
15457	CTRL	NM_001907.1	273	gcggagtatgccgatcatcaaac	181834	-	-	trypsin
15458	CTSG	NM_001911.2	573	acgacccccgaaggcagattgt	181850	-	-	trypsin
15459	CTSL	NM_001912.2	573	acgacccccgaaggcagattgt	181850	-	-	trypsin

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15459	DKFZP586	NM_015430.1	787	cggcagctgcgtcttgacaagg	181871	-	see also 6414 line	-	-
15460	H2123	NM_182502.1	1210	ctgatgcatgfcagaatgattct	181932	-	-	-	-
15461	DKFZp686	NM_001972.1	359	cggctacgaccccgtaaacctgc	181943	-	-	trypsin	congenital neutropenia(コストマン型先天性好中球減少症)
15462	L1818	NM_015849.1	741	cggctccttggtgcactactac	181950	-	-	trypsin	-
15463	ELA2	NM_007352.1	556	ctggcgggtgggactatgaaca	181953	-	-	trypsin	-
15464	ELA3B	NM_000128.2	376	aggatccaccacccgagtggtact	181958	-	-	-	-
15465	F11	NM_173502.1	634	tgggcggagggccacotgtcaatgt	182001	-	-	-	hypothromboplastinemia(低トロンボプラスチン血症)
15466	FLJ90661	NM_153692.2	1366	gagatcacgatgtaattgtcaac	182034	-	-	-	-
15467	FLJ90724	NM_006144.2	277	ttgggctcactcaataaccagg	182046	-	apoptosis	trypsin	-
15468	GZMA	NM_004131.3	258	ctgttgggaagctccataaatg	182067	-	apoptosis	trypsin	-
15469	GZMH	NM_033423.2	670	aaggacgtagcccaaggattct	182079	-	apoptosis	trypsin	-
15470	GZMK	NM_002104.1	703	aggtatctccacgctatagct	182105	-	-	trypsin	-
15471	GZMM	NM_005317.2	557	tggacaccccgatgtgaacaac	182110	-	-	trypsin	-
15472	HAT	NM_004262.1	399	gagcagatgtgtcatgaattt	182125	-	-	trypsin	-
15473	HGFAC	NM_001528.2	591	ctggcagacagagaatgctttg	182157	-	see also 1049 line	-	-
15474	HPN	NM_002151.1	1177	aggtcggagtgcccaataacgc	182166	-	receptor activity	trypsin	-
15475	IF	NM_000204.1	1209	tggatacaccccgaccttaaacg	182204	-	receptor activity	trypsin	C3b/C4b inactivator deficiency(C3b不活性化因子欠損症)
15476	KLK1	NM_002257.2	155	aggcggctctgtaccattcagc	182233	-	-	trypsin	-
15477	KLK12	NM_019598.2	800	ctggagtctacacctatatttc	182251	-	-	-	-
15478	KLK13	NM_015596.1	281	gaggcgctcaagattaccctagg	182255	-	-	trypsin	-
15479	KLK14	NM_022046.3	990	aagctggatggaggaacagctgc	182265	-	-	trypsin	-
15480	KLK15	NM_017509.2	152	gagcgtgacgtttaactgtgg	182267	-	-	-	-
15481	KLK4	NM_004917.2	74	ctggtagctgcagcccaaatcata	182274	-	-	trypsin	-
15482	KLK5	NM_012427.3	768	aagaaattcgtcccactaaagatg	182290	-	-	trypsin	-
15483	KLK6	NM_002774.2	319	gcggaccctgcgacaagacatct	182297	-	-	trypsin	Alzheimer disease(アルツハイマー病)
15484	KLK7	NM_005046.2	623	aggactgcacgaagatttacaag	182311	-	-	-	-
15485	KLK8	NM_007196.2	895	ctggcgctctataccaacatctgc	182317	-	-	-	Alzheimer disease(アルツハイマー病)
15486	KLK9	NM_012315.1	308	gagagcacaccctctggaatgg	182319	-	-	trypsin	-
15487	KLKB1	NM_000892.2	397	gtgctgccatagagacatttat	182331	-	-	trypsin	-
15488	LOC33996	NM_182606.1	717	tggggccacccttgattagtaaca	182390	-	-	trypsin	Fletcher factor deficiency(フレッチャー因子欠損)
15489	MGC34695	NM_173555.1	190	gagctgcagcggggtatcctga	182404	-	-	-	-
15490	MGC52282	NM_178453.2	355	tgtctgcccccatcaatgatacag	182407	-	see also 10269 line	-	-
15491	MGC57341	NM_182559.1	406	aagacgttagggatcctttaatg	182414	-	-	trypsin	-
15492	MPN	NM_031948.2	342	ccgggacacacgctatgtatgc	182437	-	-	-	-
15493	MSP	NM_032046.1	906	atgcccctccacgggtatctat	182444	-	receptor activity	-	-
15494	PLAT	NM_000930.2	466	cagcgagccaaggtgtttcaacg	182458	-	-	-	-
15495	PLAU	NM_002658.1	974	ctgcccctgatgtataacgatcc	182477	-	signal transduction	ETS	breast cancer(乳癌), Alzheimer disease(アルツハイマー病)
15496	PRSS12	NM_003619.2	1238	gggtcgtctggaggattatata	182503	-	see also 2431 line	-	-
15497	PRSS21	NM_006799.2	684	aagttcaggctgccatcataaac	182547	-	-	-	-

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15498	PRSS2	NM_022119.2	415	tggagcccccaccctgtgtattcc	182557	-	-	trypsin	-	
15499	PRSS25	NM_013247.3	1072	cagcacctgcgtgtctatatc	182565	-	see also 5366 line	-	-	
15500	PRSS7	NM_002772.1	515	ttgaacagcgtgtatctatctaga	182607	-	receptor_activity	trypsin	-	
15501	PRSS8	NM_002773.2	375	gtggccattctgtctctcttgg	182684	-	-	trypsin	-	
15502	PRTN3	NM_002777.2	678	tggcatcatccaaaggaatagact	182689	-	-	hematopoietic-associated factor 1A complex	-	Wegener granulomatosis autoantigen(*ウエゲナー-肉芽腫症自己抗原)
15503	SPUVE	NM_007173.3	1089	cagcgggtctgggtctatgtga	182701	-	-	trypsin	-	
15504	ST14	NM_021976.2	1169	ctgtggagccgcgttaacgaaag	182719	-	-	trypsin	-	
15505	TPMRSS2	NM_005656.2	769	aagtgcggcaatgtcgtatct	182734	-	receptor_activity	trypsin	-	prostate cancer(前立腺癌)
15506	TPMRSS3	NM_024022.1	601	aagggtcactacgcacaaatgttc	182776	-	-	-	-	
15507	TPMRSS4	NM_019894.2	912	cagcatccagtagcacacacagc	182797	-	receptor_activity	-	-	
15508	TPMRSS5	NM_030770.1	350	atggctcctagtgtctctctgt	182806	-	-	trypsin	-	
15509	TPMRSS6	NM_153019.2	922	cgggacccgactggccatgtatga	182822	-	-	-	-	
15510	TPSD1	NM_012217.1	501	ggcgagcgtggacaataatgtc	182832	-	-	trypsin	-	
15511	TSP50	NM_013270.2	734	tggcacggactatgtgtgaagg	182839	-	-	-	-	
15512	C9orf43	NM_152786.1	1565	gagaccagaatgaactactatgt	182871	-	-	-	-	
15513	FLJ10504	NM_018116.2	129	ggcgagcgagcaggaattccaagg	182877	-	-	-	-	
15514	FURIN	NM_002569.2	514	gtggcaaaagcagcgaactaaacg	182885	-	see also 1652 line	-	-	
15515	MBTPS1	NM_003791.1	1504	tggcaatgacggagcctctttatg	182934	-	see also 2590 line	-	-	
15516	PAGE4	NM_002570.2	851	ctgcggctcggaatgaatgtcc	182982	-	-	-	-	
15517	PCSK1	NM_000439.3	1507	tgtgtaatagtcgattggattt	183047	-	see also 346 line	-	-	
15518	PCSK2	NM_002594.2	890	cagcaagcagccctctctcttacc	183084	-	see also 1675 line	-	-	
15519	PCSK5	NM_006200.2	639	cagcaagtagcaggaattccaaca	183099	-	-	subtilase	-	
15520	PCSK7	NM_004716.2	784	caggacattgcacccaactatag	183167	-	see also 3237 line	-	-	
15521	PCSK9	NM_174936.2	861	gagtgcacccgggaaatcgaggg	183181	-	see also 10133 line	-	-	
15522	TNS	NM_022648.2	849	aagaagtagctgctacttacttca	183189	-	-	structural molecule	-	
15523	TPP2	NM_003291.1	3186	ctgtacgttcacagacttcactca	183317	-	see also 2225 line	-	-	
15524	APEH	NM_001640.3	1984	gggctttcgggtactactactgtga	183354	-	-	prolyl	-	
15525	DPP4	NM_001935.2	858	aagactgtacgggttccatctacc	183387	-	see also 1234 line	-	-	
15526	FAP	NM_004460.2	1091	tggctcacgtgggttactatga	183471	-	see also 3010 line	-	-	
15527	PREP	NM_002726.2	37	gagaccgcggtacagagattatca	183500	-	-	sulfate porter	-	
15528	SERPINB2	NM_002575.1	1075	aaggagcgggccaatttctcaggg	183584	-	see also 1656 line	-	-	
15529	SERPINE1	NM_000602.1	1052	aggctgaacttcacagactttcca	183599	-	-	Proto-oncogene C-JUN	-	atherosclerosis(粥状硬化症)
15530	CLPP	NM_006012.1	690	tggagaggagccgctacatagagc	183604	-	-	endopeptidase Clp	-	
15531	WDR11	NM_018117.1	2644	ctgtgtacgtcagataaagtgga	183682	-	see also 7260 line	-	-	
15532	CLN2	NM_000391.2	1474	ggggatcctactctcttgatcaat	183716	-	-	tripeptidyl-peptidase I	-	amaurotic idiocy(黒内障性白痴)、ceroid-lipofuscinosis(セロイドリポフスチン蓄積症)
15533	DPP7	NM_013379.1	134	tcagagcgttcggcaacaagacc	183721	-	-	serine-type endopeptidase	-	
15534	FOLH1	NM_004476.1	776	ggagctatgtatgttaactat	183737	-	see also 3028 line	-	-	
15535	NAALAD2	NM_005467.2	60	gggcccgtctgtaccttggatgt	183740	-	-	serine-type endopeptidase	-	

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15536	NAALADL 1	NM_005468.1	694	gagctaccgacgaacatttc	183809	-	-	serine-type endopeptidase	-
15537	P11	NM_006025.2	1176	tagctgtccgacatactctgg	183848	-	see also 4204 line	-	-
15538	PRSS16	NM_005865.2	683	tggatccgaagcctaagtcg	183855	-	-	serine-type endopeptidase	-
15539	RELN	NM_005045.2	847	cagtggtgcgcgattatgcattg	183876	-	see also 3523 line	-	-
15540	RHBDL2	NM_017821.2	905	tgggtacacgggttttagctgc	184159	-	-	serine-type endopeptidase	-
15541	ADAMTS2	NM_014244.1	871	ctgtgacactcatgaacattgt	184164	-	see also 5553 line	-	-
15542	PMPCB	NM_004279.1	1166	tggatgcgactctgtacaaagtgt	184218	-	-	mitochondrial processing peptidase	-
15543	OSGEP	NM_017807.1	501	cagcccaacccgtgtgtatgtga	184232	-	-	-	-
15544	OSGEP1	NM_022353.1	1089	ctgggtgtgcgaagaacttc	184277	-	see also 8343 line	-	-
15545	IDE	NM_004969.1	2048	aagcatatgcgactctctaac	184350	-	see also 3451 line	-	-
15546	NRD1	NM_002525.1	1578	tggccatttaacgggatccattg	184412	-	see also 1621 line	-	-
15547	RCE1	NM_005133.1	533	tgggtcgcggaaccaagtgatcg	184479	-	-	prenyl-dependent CAAX protease	-
15548	ADAM18	NM_014237.1	1080	cagcatgcacgactatagatatt	184522	-	-	metalloendopeptida se	-
15549	ADAM32	NM_145004.4	728	tgggctctctagatcgatgagt	184579	-	signal_transduction	-	-
15550	ADAM7	NM_003817.1	2122	ttgtcggatcgcgaggttttata	184708	-	-	-	-
15551	ADAMTS1	NM_080722.2	917	ttgcctctgcgcttgatcatg	184725	-	-	-	-
15552	ADAMTS1	NM_139054.2	625	tagactcagccgggtcatatt	184797	-	see also 9648 line	-	-
15553	UQCRC1	NM_003365.1	1193	aggacgctgtgccactcttact	184879	-	-	ubiquinol- cytochrome c reductase	-
15554	UQCRC2	NM_003366.1	1107	aaggctgctctataatcaagtaa	184921	-	see also 2271 line	-	-
15555	ZMPSTE24	NM_005857.2	790	ctggttctgtcacaactctatgc	184940	-	see also 4072 line	-	-
15556	BACE	NM_012104.2	1316	tggcaccacccaaccttcttgc	184966	-	see also 5134 line	-	-
15557	BACE2	NM_012105.3	1253	tgttatccctctattaaaggaaga	184986	-	-	-	-
15558	CTSD	NM_001909.3	199	caggatcccgctgcacaaagtcca	185003	-	-	Smad3/Sp-1 heterodimer	breast cancer(乳癌)、Alzheimer disease(アルツ ハイマー病)
15559	NAP1	NM_004851.1	253	tgtacctctctogaactacagg	185013	-	-	pepsin A	-
15560	PGC	NM_002630.1	109	aagtgcctctgaagaatttaag	185018	-	-	pepsin A	-
15561	REN	NM_000537.2	1082	cagcgggactatgtatttcagg	185047	-	-	renin	hyperprereninemia(高レニン血症)
15562	FLJ13687	NM_024935.2	1472	ctgataggctatggcactttacc	185088	-	-	-	-
15563	FLJ25084	NM_152792.1	959	gggaacatatcacaagctaagg	185112	-	-	-	-
15564	MGC26605	NM_144662.1	529	atgatgggtatctcaagattgtat	185136	-	-	-	-
15565	PSMA2	NM_002787.2	185	ctgtatgatgagcgaagtgtaca	185152	-	-	proteasome endopeptidase	-
15566	PSMA3	NM_002788.2	599	atgacctgcctgatatgttaa	185178	-	-	-	-
15567	PSMA4	NM_002789.3	181	aggtgccttataccaggttgat	185190	-	see also 1815 line	-	-

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15568	PSMA5	NM_002790.2	575	cagtgtgctcgcagcaattgg	185229	-	-	protease endopeptidase	-
15569	PSMA7	NM_002792.2	223	aggaaagagacattgtgttcctg	185232	-	see also 1818 line	-	-
15570	PSMB1	NM_002793.2	240	acggggagatagcccaaatgta	185245	-	-	protease endopeptidase	-
15571	PSMB10	NM_002801.2	406	tggagctacacgcgttatctacg	185268	-	-	protease endopeptidase	-
15572	PSMB2	NM_002794.3	530	cagtatcctcgcacgatactaca	185279	-	-	protease endopeptidase	-
15573	PSMB3	NM_002795.2	312	agtcggcagatcaaaccttata	185290	-	-	protease endopeptidase	-
15574	PSMB4	NM_002796.2	266	ccgcaacatctctcgcattatgc	185300	-	-	protease endopeptidase	-
15575	PSMB5	NM_002797.2	611	atggatcggggctattcctatga	185323	-	-	protease endopeptidase	-
15576	PSMB7	NM_002799.2	647	gggtccgggaagcaacattgaac	185344	-	-	protease endopeptidase	-
15577	PSMB8	NM_004159.3	914	cagtgcctatggcctaatttta	185356	-	-	diabetes(糖尿病)	-
15578	PSMB9	NM_002800.3	431	aaggaggtcgaagtatatgaac	185365	-	-	-	-
15579	SENP1	NM_014554.1	1337	aagcattcgcctgaccattaca	185406	-	-	-	-
15580	AGTPBP1	NM_015239.1	2801	cagagcttacgagaattctatat	185506	-	see also 6284 line	-	-
15581	CPA1	NM_001868.1	568	cattgggtctcgtttgtaacaga	185529	-	-	carboxypeptidase	-
15582	CPA2	NM_001869.1	333	gagaacggagtgtaacttaaat	185539	-	-	carboxypeptidase	-
15583	CPA3	NM_001870.1	204	atgttggtattcgcgattgtaga	185565	-	see also 1202 line	-	-
15584	CPA4	NM_016352.1	725	aagacgggtcccgaaatccctgg	185634	-	see also 6832 line	-	-
15585	CPA5	NM_080385.2	1597	tggagcattcgcgattattgtcca	185647	-	-	-	-
15586	CPA6	NM_020361.2	1303	gggttacgatacagatatggacc	185702	-	-	-	-
15587	CPB1	NM_001871.1	99	aaggttccgtgttaacgttga	185709	-	-	carboxypeptidase	-
15588	CPB2	NM_001872.2	1128	tgggacgattggatctatgatt	185770	-	-	-	-
15589	CPD	NM_001304.3	3770	tagcgcaggtgtccataacatt	185910	-	see also 859 line	-	-
15590	CPE	NM_001873.1	1078	atgttagtgcctcacgaatacagc	185947	-	see also 1203 line	-	-
15591	CPN1	NM_001308.1	1017	tggaaactggaggattacttcc	185981	-	-	protein stabilization	episodic angioedema(揮発性血管浮腫)
15592	CPO	NM_173077.1	535	gggaacggatctcaatcgaaattt	186012	-	-	-	-
15593	CPXM	NM_019609.2	1335	ggagcatcgatcttaacataatt	186049	-	-	-	-
15594	GPZ	NM_003652.1	1368	aggcatgtccgatttaaacatacc	186067	-	-	receptor activity	-
15595	DSCAML1	NM_020693.2	1663	ctgaatacagcgcggaataaac	186087	-	see also 7916 line	-	-
15596	FLJ21347	NM_022827.2	1485	gtcgcgaactgtctcaattcagg	186134	-	-	-	-
15597	FLJ23598	NM_024783.2	1933	aggaaacaggacaggttgttatgt	186189	-	-	-	-
15598	FLJ32310	NM_152336.1	929	ctgttcaacgcagatgtgaatag	186226	-	-	-	-
15599	LOC11958	NM_198148.1	1295	atgcgcaggttgatgaagtgtgt	186241	-	-	-	-
15600	MGC20452	NM_153232.2	779	aagaacttggttcgataagttt	186275	-	-	-	-
15601	TBC1D1	NM_015173.1	1161	aggacagctatgcgtttacaaca	186299	-	see also 6286 line	-	-
15602	PGCP	NM_016134.2	1074	atggcgggtggagcgtttatcca	186339	-	-	-	-
15603	FLJ14675	NM_032823.3	930	ctgaagggtcgcgttcacatgg	186372	-	-	-	-

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15604	RNPEPL1	NM_018226.2	1531	gaggtccgcaacgactactatcc	186411	-	see also 7329 line	-	-
15605	TAF2	NM_003184.2	3017	atgacctgtaccctatgttaagg	186499	-	transcription_regulat or	-	-
15606	METAP1	NM_015143.1	627	atgaagtcggcccatgtattac	186542	-	-	methionyl aminopeptidase	-
15607	METAP2	NM_006838.2	738	atgccgggtgacacaacagatta	186558	-	-	methionyl aminopeptidase	-
15608	PA2G4	NM_006191.1	752	gaggtacatgaagtatatgtctgt	186582	-	cell_cycle	methionyl aminopeptidase	-
15609	DPEP1	NM_004413.1	377	agggactccctgctcattgatgg	186586	-	-	membrane dipeptidase	-
15610	DPEP2	NM_022355.1	1045	tggcgtcgtgatgtgtgtttgt	186596	-	-	-	-
15611	DPEP3	NM_022357.1	889	atgcatcgagacaccttgataaga	186601	-	-	-	-
15612	DNPEP	NM_012100.1	1025	gtgcgcatgtgcacactctatga	186619	-	see also 5131 line	-	-
15613	LOC63929	NM_022098.2	210	aggattccaaaccgatacttagg	186631	-	see also 8270 line	-	-
15614	XPNEP1	NM_020383.2	496	tggacccttgatcattctctaca	186673	-	see also 7859 line	-	-
15615	XPNEP2	NM_003399.3	1956	tggaccctgtctcgaagatgtgg	186730	-	-	-	-
15616	ACY1	NM_000666.1	832	gggtgctggtgcctataacatga	186738	-	-	metallopeptidase	small cell lung cancer(肺癌)
15617	CN1	NM_032649.4	1166	ccgttagtccctccacatgaatg	186771	-	-	-	-
15618	CN2	NM_018235.1	543	ggaggttcgactgtatgaagg	186794	-	-	-	-
15619	FLJ32569	NM_152491.1	196	ggaggaacgcgtgcgatgaaga	186825	-	-	-	-
15620	PITRM1	NM_014889.1	1240	cagaaacattgatgaagtgttg	186871	-	-	transcription factor	-
15621	TIMP1	NM_003254.1	365	ccgcagcaggaggatttctcatg	186908	-	-	ETS	renal cell carcinoma(腎臓癌)、 chondrosarcoma(軟骨肉腫)、Parkinson disease(パーキンソン病)、melanoma(メラノーマ)
15622	DPP10	NM_020868.1	1247	atggtatccctcgtgtttactgg	186926	-	see also 8010 line	-	-
15623	DPP6	NM_001936.2	1047	cagattccctacacagtatttg	187007	-	-	-	-
15624	DPP8	NM_017743.3	2249	aggatacaggaacgttatatgg	187110	-	-	-	-
15625	DPP9	NM_139159.2	2901	gagtcggcgagcactatgaagt	187176	-	see also 9662 line	-	-
15626	PRCP	NM_005040.2	970	tggcaatggtggactatccttat	187207	-	-	lysosomal pro-X carboxypeptidase	-
15627	PPGB	NM_000308.1	1131	aagcatgaactccagtatctga	187244	-	-	vacuolar carboxypeptidase	galactosialidosis(ガラクトシアリドーシス)
15628	CPVL	NM_019029.1	688	atgtagcagggatttatcacagt	187259	-	-	-	-
15629	RISC	NM_021626.1	857	aagcaatccacgtctacaatgg	187299	-	see also 8152 line	-	-
15630	CASP10	NM_001230.2	205	aaggccaacattgatttccagt	187338	-	-	apoptosis	non-hodgkin lymphoma(非ホジキンリンパ腫)、 autoimmune lymphoproliferative syndrome(免疫 細胞増殖性疾患)、gastric cancer(胃癌)
15631	CASP14	NM_012114.1	536	cagatgccttgcacgtttattcc	187374	-	-	apoptosis	-
15632	CASP3	NM_004346.2	669	ggagctgttgaagagttaact	187381	-	-	apoptosis	-
15633	CASP4	NM_001225.2	546	ctgactatagtagatagtaga	187407	-	-	apoptosis	Alzheimer disease(アルツハイマー病)
15634	CASP5	NM_004347.1	347	aagaatcgcgtggctcatcaaat	187419	-	-	apoptosis	-
15635	CASP6	NM_001226.2	745	gtgaacgctctatggtacattca	187457	-	see also 806 line	-	-
15636	CASP7	NM_001227.2	929	atgctaactcctgatacaagatc	187480	-	-	-	craniofacial dysostosis(頭蓋顔面異骨症)

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15637	CASP8	NM_001228.2	479	ctgattacctaacctaaacactag	187494	-	see also 807 line	-	-
15638	CASP9	NM_001229.2	1077	cagctggagcgccatctctagttt	187543	-	apoptosis	-	-
						-	apoptosis, kinase-related	-	lupus erythematosus(円板状エリテマトーデス), Alzheimer disease(アルツハイマー病)
15639	CFLAR	NM_003879.3	1389	gagactacgacagcgtttgtgtgt	187568	-	-	-	-
15640	CAPN13	NM_144575.1	1277	agggatgtcccaataatgtttt	187607	-	-	-	-
15641	CAPN5	NM_004055.3	1149	agagcgtgcgcgtacttcaag	187623	-	see also 2732 line	-	-
15642	CAPN6	NM_014288.2	1700	gtggctaccgaaagtagttact	187662	-	see also 5594 line	-	-
15643	CAPN7	NM_014296.1	2454	agccaatatagcgtggatttga	187754	-	see also 5603 line	-	-
15644	CTSL	NM_001912.2	442	agcgcgatgcacaaacagattatc	187763	-	-	-	Alzheimer disease(アルツハイマー病)
15645	CTSL2	NM_001333.2	1116	tggcgctcgaatggctatgtaaa	187780	-	-	cathepsin L	-
15646	LGMN	NM_005606.3	733	ctgcgggataaacatcaatgttta	187789	-	-	legumain	-
15647	PIGK	NM_005482.1	93	cagcgtggcgcgtactgcatactg	187806	-	see also 3813 line	-	-
15648	CTSS	NM_004079.3	335	atgggaatgcactcactacgatct	187855	-	see also 2749 line	-	-
15649	CTSK	NM_000396.2	471	cagactctgtgactatcgaaag	187884	-	see also 317 line	-	-
15650	CTSH	NM_004390.2	285	aagataaacgcccacacaaatgg	187899	-	-	-	-
15651	CTSB	NM_001908.2	1098	aggtcactgtggaaatcgaaatca	187928	-	-	-	Alzheimer disease(アルツハイマー病)
15652	BLMH	NM_000386.2	790	atgagaaattctgtatacgaact	187949	-	see also 306 line	-	-
15653	AQP11	NM_173039.1	1139	ctgcataaacaccatacaattaa	187975	-	-	-	-
15654	ARHGEF10	NM_014629.1	5454	ggcgaccgcgaagctctttacagc	188020	-	-	-	-
15655	CT120	NM_024792.1	383	aagtogaaccgcctcatgatca	188049	-	-	-	-
15656	CTSC	NM_001814.2	236	cggttccagcgcgctgtcaact	188060	-	-	-	-
15657	CTSF	NM_003793.2	1109	atgcctactcggccataaagaat	188116	-	-	lysosomal cysteine-type	-
15658	CTSO	NM_001334.2	524	caggctcattgactgttctgtataa	188137	-	-	cysteine-type endopeptidase	-
15659	CTSW	NM_001335.2	630	ctgggagcgcgttcataactgtcc	188170	-	-	cysteine-type endopeptidase	-
15660	CTSZ	NM_001336.2	427	tggcggatcgatcaacatcaag	188173	-	-	cysteine-type endopeptidase	-
15661	CYLD	NM_015247.1	2057	gagcgttaactcttttagcatt	188229	-	see also 6290 line	-	-
15662	D13S106E	NM_005800.3	790	tctgaaccttacctgatagtag	188284	-	-	-	-
15663	FLJ20558	NM_017880.1	1712	cagaaaccgagatgggaactatga	188412	-	see also 7168 line	-	-
						-	receptor activity, gpcr, signal transduction	-	-
15664	GPR114	NM_153837.1	1003	gagtcattggcgacgtgaacaaacc	188429	-	-	protein disulfide isomerase	-
15665	GRP58	NM_005313.3	614	cagcaacttgaggagataactacc	188448	-	-	-	-
15666	KIAA1203	NM_020718.1	1188	ttgagcccccaggtttgcattca	188505	-	-	-	-
15667	LCN7	NM_022164.1	768	cagatcgtgtctcaatccattct	188536	-	-	-	-
15668	LOC83693	NM_031463.3	526	cagcagcaggtcgtgagatctacc	188555	-	-	-	-
15669	MGC20741	NM_018561.3	1891	aggtggctcggccgtaatactgc	188599	-	-	-	-
15670	MGC26717	NM_173824.2	126	atggagggcgtccgctaactactg	188605	-	see also 7525 line	-	-
15671	PARK2	NM_004562.1	106	tagtgttttcaggttcaactcc	188629	-	-	-	Parkinson disease(パーキンソン病)

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15672	USP1	NM_003368.3	709	ctgaataatctcgcaataacttg	188661	-	-	ubiquitin-specific protease	-
15673	USP10	NM_005153.1	1502	cagctttgttcgctaataatg	188774	-	see also 3615 line	-	-
15674	USP11	NM_004651.2	2213	atgccagcccgkacatgtctatc	188809	-	see also 3165 line	-	-
15675	USP12	NM_182488.1	707	atgctgtttacctaataatgta	188841	-	see also 10263 line	-	-
15676	USP14	NM_005151.2	583	tggcttcagcagcatattact	188886	-	-	ubiquitin-specific protease	-
15677	USP15	NM_006313.1	2532	agtccttcgctataatctga	189028	-	see also 4416 line	-	-
15678	USP16	NM_006447.1	1205	tgggttggaactaactagtatga	189070	-	see also 4515 line	-	-
15679	USP18	NM_017414.2	354	gggtcctctgaggcaaatctgtca	189114	-	-	ubiquitin-specific protease	melanoma(メラノーマ)
15680	USP2	NM_004205.3	1448	cagtagggtcggggtctctttg	189134	-	see also 2815 line	-	-
15681	USP20	NM_006676.2	259	gggtcaccgggacccaacatctgg	189148	-	-	ubiquitin C-terminal hydrolase	-
15682	USP21	NM_012475.2	1142	atgaccgagccaactaatgtgg	189179	-	see also 5349 line	-	-
15683	USP25	NM_013396.2	3579	gcgattgcgccgaatcatgtgt	189298	-	see also 5429 line	-	-
15684	USP26	NM_031907.1	679	ttgttcgagggtgtgaagctata	189314	-	-	ubiquitin C-terminal hydrolase	-
15685	USP29	NM_020903.1	1517	ttgcaaggccatacatttagtagg	189412	-	-	-	-
15686	USP3	NM_006537.1	1179	ttgttcgtacagatgtcttc	189468	-	see also 4570 line	-	-
15687	USP30	NM_032663.2	173	cggccgctcagatataaagctatg	189477	-	-	-	-
15688	USP31	NM_032236.3	611	cagtaataaggcgtacatctgctc	189520	-	-	-	-
15689	USP33	NM_015017.2	818	gaggactagctgcgaacagataag	189625	-	see also 6186 line	-	-
15690	USP36	NM_025090.2	1043	cggcgaagctgcgaatattgtgc	189711	-	-	-	-
15691	USP38	NM_032557.4	1288	gagccttactacggatocaaatg	189809	-	see also 9246 line	-	-
15692	USP4	NM_003363.2	2520	tgtgtgtcacctcaaacgtttc	189933	-	see also 2268 line	-	-
15693	USP44	NM_032147.1	536	aagttactacgactacattag	189952	-	-	-	-
15694	USP46	NM_022832.2	651	caggggaacgttaccgaatgaac	190025	-	see also 8487 line	-	-
15695	USP47	NM_017944.2	1956	aggtggcgtcaagccaacatata	190107	-	see also 7180 line	-	-
15696	USP5	NM_003481.1	805	tggagctgacgtgtactcatatg	190188	-	-	ubiquitin isopeptidase T	-
15697	USP52	NM_014871.1	1818	gagcctgtacgtgtcttaattca	190230	-	see also 6067 line	-	-
15698	USP7	NM_003470.1	3097	gagccggacgcttcgaatagagg	190373	-	-	ubiquitin-specific protease	-
15699	USP8	NM_005154.1	3642	ttgggacacagagtaactgatgt	190473	-	see also 3617 line	-	-
15700	USP9X	NM_004652.2	3790	gtgggtgtttacagcgtgtattt	190527	-	see also 3166 line	-	-
15701	USP9Y	NM_004654.2	3689	cagtaacgagcgtgtattgtta	190610	-	-	ubiquitin-specific protease	-
15702	BAP1	NM_004656.2	2033	gaggctgagatgcaactatga	190688	-	-	-	-
15703	UCHL1	NM_004181.3	335	tggcacacatcgagcattattcacg	190695	-	-	ubiquitin C-terminal hydrolase	Parkinson disease(パーキンソン病)
15704	UCHL3	NM_006002.3	670	gagcgcgacctgtagaactaag	190715	-	see also 4186 line	-	-
15705	UCHL5	NM_015984.1	394	gtgctactcaagccatagtagt	190728	-	see also 6595 line	-	-
15706	UFD1L	NM_005659.3	245	cagccgacttaacattacatctc	190759	-	see also 3929 line	-	-



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15707	PGPEP1	NM_017712.1	370	gaggacgggctgaagcattga	190785	-	-	pyroglutamyl-peptidase I	-
15708	MG27076	NM_152699.2	2150	ctgtacactcttaatacgaatt	190836	-	see also 9927 line	-	-
15709	PRSC2	NM_145204.2	592	atgtacgtgatatgaacactga	190863	-	-	-	-
15710	SENP3	NM_015670.2	1200	ggggcttcaggatggcttataag	190874	-	-	-	-
15711	SENP7	NM_020654.2	419	aagataccacagagtattatga	190898	-	-	cysteine-type peptidase	-
15712	SUSP1	NM_015571.1	205	aagtaaatcgtcgatcgaat	190987	-	-	cysteine-type peptidase	-
15713	TINAG	NM_014464.1	5	tggaccggatataagaattctta	191085	-	see also 5696 line	-	-
15714	ABHD5	NM_016006.3	189	tggcgccctacgtctatatcaca	191128	-	-	-	Ghanarin-Dorfinan syndrome(キヤナリンドルフマ ン症候群)
15715	GGH	NM_003878.1	229	ctgctccctatgtaaaacttg	191164	-	-	gamma-glutamyl hydrolase	-
15716	LOC51185	NM_016302.2	935	cagcgactcgtgtgaattaga	191204	-	see also 6798 line	-	-
15717	RNF127	NM_024778.3	1434	ttgaatgcgtctctatgatgaga	191236	-	-	-	-
15718	C14orf137	NM_023112.2	319	caggcccttgggctattctacc	191262	-	-	-	-
15719	C2orf7	NM_032319.1	179	tgggacattcgatacatctcca	191274	-	-	-	-
15720	C9orf52	NM_152574.1	875	aggattatcagactactagaatt	191293	-	-	-	-
15721	DHH	NM_021044.2	636	tggccattgccgtgatgaacatg	191326	-	see also 8076 line	-	-
15722	DKFZP566					-	-	-	-
15723	H073	NM_015528.1	767	tgtgcccgtgtgtagcaccaatg	191335	-	see also 6451 line	-	-
15724	FLJ10613	NM_019067.3	1679	ccgcccataagagcaacagatgg	191369	-	-	-	-
15725	IMP5	NM_175882.1	990	gtgcgcaacgtgacatctctct	191418	-	-	-	-
15726	KYNU	NM_003937.1	983	aagcatgccatcacgattaaacc	191451	-	-	peptidase	-
15727	LOC56926	NM_020170.1	347	aggacgtgctcggcaattcatg	191471	-	-	-	-
15728	MGC10067	NM_145049.1	931	atgaagcgcacctaataatcgtga	191519	-	-	-	-
15729	OTUB1	NM_017670.1	199	tggagctctcgtgctctatacaag	191525	-	-	-	-
15730	PACS1	NM_018026.2	2153	ggggtcagtcgacagataaataca	191558	-	-	-	-
15731	RNF128	NM_024539.3	947	atgatttggtacgcattcttaacg	191589	-	see also 8634 line	-	-
15732	RNF13	NM_007282.3	1025	tggcactttcatggtgtaatta	191620	-	see also 5076 line	-	-
15733	RNF130	NM_018434.4	1369	ctgataacgtgacattgatgatg	191660	-	see also 7470 line	-	-
15734	RNF149	NM_173647.2	575	tagtgcattatgattgagctat	191671	-	-	-	-
15735	SHH	NM_000193.2	451	gaagtgaaggcaagttggaacg	191683	-	-	peptidase	holoprosencephaly(全前脳症)
15736	SPC12	NM_014041.1	270	cgggtggactgctctatagttga	191688	-	see also 5470 line	-	-
15737	SPC18	NM_014300.2	500	aagtgaagtcgcgattgattgag	191692	-	-	peptidase	-
15738	SPPL2A	NM_032802.2	633	tcgtgccccttaacttggattatag	191710	-	see also 9286 line	-	-
15739	SPPL2B	NM_020172.1	417	aagacgcagatgatgagattgg	191754	-	-	-	-
15740	SPPL3	NM_139015.3	1281	tgggcattggagacacatgattatg	191779	-	-	-	-
15741	TFR2	NM_003227.2	1218	gggctagtggtcaacaataca	191787	-	-	transferrin	-
15742	TFRC	NM_003234.1	913	ggggttatgggctatagtagaag	191824	-	see also 2184 line	-	-
15743	WFIKN	NM_053284.1	691	atggccctgatcagatgatgtag	191868	-	-	-	-
15744	WFIKNRP	NM_175575.4	974	ttgtaacctgccgtatcacttc	191870	-	-	-	-

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15745	OCA2	NM_000275.1	1137	gggtctacgcgctgcatcatatt	191890	-	-	albinism(白児症)
15746	ATP6V1E1	NM_001696.2	513	ttgtctgagcccccgaatgattgt	191919	-	hydrogen- translocating V- type ATPase	
15747	ATP6V1E2	NM_080653.2	1563	aagccatccccagagtacatgaca	191930	-	-	
15748	ATP1B1	NM_001677.2	915	aaggcgtacagtgagaacattgg	191963	-	steroid hormone receptor	
15749	ATP1B3	NM_001679.1	260	cagtgaccgcgcatggaaatataca	191971	-	sodium/potassium- exchanging	
15750	ATP1B4	NM_012069.2	451	ctgaccatcagtcctctataacc	191989	-	see also 5105 line	
15751	ATP4B	NM_000705.1	341	ttgtctacaacgtctctgataaac	192012	-	sodium/potassium- exchanging	
15752	FXYD2	NM_001680.3	82	gggacgtggacccggttctactat	192020	-	channel	
15753	KATNB1	NM_005886.1	1585	gtgagccatgggcgacacataaga	192032	-	-	
15754	p44S10	NM_014814.1	316	gagcgaatttcggatgcaatga	192041	-	see also 6005 line	
15755	NUDT9	NM_024047.3	1094	cagccaagaccacactagtgatat	192102	-	phosphatase、 channel	
15756	HTCD37	NM_021222.1	447	ttgtcgaccatcatcttatcc	192117	-	phosphatase	
15757	MGC20553	NM_174938.3	1186	aaggaagttagatttcgatatagt	192151	-	see also 10134 line	
15758	SHAPY	NM_138793.2	733	cggctgggattcggatcgaatc	192164	-	kinase-related	
15759	C21orf6	NM_016940.1	447	ctgtcagatcagttattatgagt	192183	-	see also 6977 line	
15760	RWDD2	NM_033411.2	754	aggagttctggcacacaaatagg	192206	-	see also 9421 line	
15761	NUDT3	NM_006703.2	570	aagcacagcagctatgtctatgt	192217	-	phosphatase	
15762	ITPA	NM_033453.2	601	ctgcttcagcctgatggatag	192228	-	phosphatase	
15763	NUDT2	NM_001161.3	367	ggagcattgtggctgcatcatct	192230	-	see also 741 line	
15764	RRAGD	NM_021244.2	282	aagcggccaagtcgtctattcaga	192238	-	see also 8144 line	
15765	FLJ10458	NM_018096.2	1372	cggccacgcggatgaggtatag	192267	-	gpcr、 signal transduction	
15766	GNB1	NM_002074.2	671	ctgcggtggcctggataacattt	192276	-	gpcr、 signal transduction signal transducer	
15767	GNB2	NM_005273.2	839	cagatggccgcgacggtttgtgta	192284	-	gpcr、 signal transduction signal transducer	
15768	GNB3	NM_002075.2	1050	ggggacctgcgctgcagactttca	192292	-	see also 1339 line	
15769	GNB4	NM_021629.2	389	atggaactctgtgggtcgaataca	192298	-	gpcr、 signal transduction signal transducer	
15770	GNB5	NM_006578.2	451	gtgtgtgatttggataataagtgt	192335	-	gpcr、 signal transduction	
15771	GNB10	NM_004125.2	427	gggtgttcagctggaagtaacc	192348	-	gpcr、 signal transduction signal transducer	
15772	GNB13	NM_016541.1	90	gtggagcgtgccacagatgaaga	192349	-	gpcr、 signal transduction signal transducer	
15773	GNB3	NM_012202.1	341	cagcttggtcggataaaagtgt	192352	-	gpcr、 signal transduction signal transducer 、kinase-related	

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15774	GNL4	NM_004485.2	363	gcgggaagatcctctcatcattc	192353	-	gpcr、 signal transduction	signal transducer	-
15775	GNL1	NM_021955.1	152	tggcgaggatccactggttaaagg	192363	-	gpcr、 signal transduction	signal transducer	-
15776	GNL2	NM_031498.1	427	gagggccaagcaggaaacgatcc	192364	-	gpcr、 signal transduction	signal transducer	-
15777	RGS11	NM_003834.1	451	atgaccggctacacaagaagatc	192374	-	gpcr、 signal transduction	-	-
15778	RGS6	NM_004296.3	1245	gcgggaccaggtttctacgattcc	192411	-	see also 2877 line	-	-
15779	RGS7	NM_002924.2	1168	aagtcgctacagctactaagt	192442	-	gpcr、 signal transduction	regulator of G- protein signaling	-
15780	RGS9	NM_003835.1	1015	aggcgctggatcaacatagatgg	192469	-	gpcr、 signal transduction	heterotrimeric G- protein GTPase	-
15781	WDR5B	NM_019069.2	689	ctgataggctaatcataatttgg	192480	-	gpcr、 signal transduction	-	-
15782	ARHGAP5	NM_001173.1	2037	ttggatcatggcgccttaagatt	192548	-	see also 744 line	-	-
15783	GTPBP3	NM_032620.1	644	acgtgaggcctctatagatttc	192649	-	-	-	-
15784	MFN1	NM_017927.1	693	ttggtcgcaactctggaataac	192670	-	-	-	-
15785	SAMHD1	NM_015474.2	1814	ttgatgcccgaagacaatttt	192784	-	signal transduction	-	-
15786	CDC25A	NM_001789.1	1799	gagatgcctggtgtaataaac	192828	-	phosphatase, cell cycle, kinase related	phosphatase	-
15787	CDC25B	NM_004358.2	577	caggcagccagccggatcattcg	192831	-	phosphatase, cell cycle	-	-
15788	CDC25C	NM_001790.2	1257	ttgtgcctatccatagatc	192875	-	phosphatase, cell cycle, kinase related	-	myelodysplastic syndrome(骨髓異形成症候群)
15789	DUSP18	NM_025111.2	554	gcggcctctcgagataaccaaa	192886	-	phosphatase	-	-
15790	DUSP19	NM_080876.2	765	gagcagcttcgtacatacaaga	192903	-	see also 9541 line	-	-
15791	MTM1	NM_000252.1	1736	tagcctacgcgagcaatacata	192972	-	see also 188 line	-	-
15792	MTMR3	NM_021090.2	518	aagttgtaatgccgagatatat	192980	-	see also 8083 line	-	-
15793	PTP4A1	NM_003463.2	1131	aagattcaaacggtaatagaac	193055	-	phosphatase	-	-
15794	PTPN1	NM_002827.2	1241	ccgcaccctacgcacatcgaaagc	193077	-	phosphatase, signal transduction	phosphatase	-
15795	PTPN11	NM_002834.3	857	gagcaatgcgcgcaagtaaaag	193096	-	see also 1854 line	-	-
15796	PTPN12	NM_002835.2	245	cagccaggttaattgacattaa	193141	-	see also 1855 line	-	-
15797	PTPN13	NM_006264.1	5644	ttgtacccggcacaatacactaac	193373	-	see also 4351 line	-	-
15798	PTPN14	NM_005401.3	647	gtgcttgaaggcgattacgatg	193433	-	see also 3767 line	-	-
15799	PTPN18	NM_014369.2	444	ctgatggcctctcgagagataga	193493	-	receptor activity, phosphatase	phosphatase	-
15800	PTPN2	NM_002828.2	252	ccgctgtacttggaaattcgaaa	193505	-	receptor activity, phosphatase	-	-

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15801	PTPN21	NM_007039.2	3589	ctgttcgagccatcaaaaatagc	193586	-	see also 4927 line		
15802	PTPN22	NM_012411.2	284	tagaactatcctcgataacctct	193595	-	see also 5312 line		
15803	PTPN3	NM_002829.2	1688	aggggatcaaatcgtgtaataca	193714	-	phosphatase	structural molecule	-
15804	PTPN4	NM_002830.2	1100	ttgttaagtgcacccaacaagta	193743	-	see also 1836 line		
15805	PTPN5	NM_032781.2	1509	acgagaaatgcaccgagatttgg	193849	-	phosphatase	prenylated protein tyrosine phosphatase	-
15806	PTPN6	NM_002831.3	1276	gtgggatgcagcgtgcttatgg	193865	-	see also 1850 line		
15807	PTPN7	NM_002832.2	564	gaggacggagattacatcaatgc	193880	-	phosphatase	-	-
15808	PTPN9	NM_002833.2	1134	aagtcgggagagagattcaata	193895	-	see also 1851 line		
15809	PTPRA	NM_002836.2	2451	gtgaacgcgatcctttatgtgg	193945	-	see also 1858 line		
15810	PTPRB	NM_002837.2	1981	gtgaacaattccggtcgtgaatga	194004	-	see also 1860 line		
15811	PTPRD	NM_002839.1	899	caggcgaagcgttaataatcacc	194229	-	receptor activity, phosphatase,		
15812	PTPRE	NM_006504.3	2033	gagtagtcgcccaggtttcacttc	194410	-	signal transduction	-	-
15813	PTPRJ	NM_002843.2	1517	gcgataacgagtcgctcatctaac	194449	-	phosphatase	-	-
15814	PTPRK	NM_002844.2	2208	gtgggggtgcaccgtattacttt	194590	-	see also 1870 line		
15815	PTPRM	NM_002845.2	995	cgctcattccacagcgtataaa	194684	-	see also 1875 line		
15816	PTPRN2	NM_002847.2	1202	aggacgacgatgatagactttac	194780	-	see also 1880 line		
15817	PTPRO	NM_002848.2	3603	gaggtcataccggatgctctagg	194903	-	see also 1882 line		
15818	PTPRS	NM_002850.2	1562	cagcggacaccacatgattgtgc	194918	-	receptor activity, phosphatase	-	-
15819	PTPRT	NM_007050.3	1200	tagtcgacttcccacataaag	194951	-	see also 4934 line		
15820	PTPRU	NM_005704.2	1370	acgcgttgccacacctatactgt	194999	-	receptor activity, phosphatase, signal transduction	-	-
15821	TPTE	NM_013315.2	1718	atgttcggtacttgataacatta	195032	-	channel, phosphatase, signal transduction	prenylated protein tyrosine phosphatase	-
15822	PTPRH	NM_002842.1	1951	tggaaacccgggacgttgtacaat	195042	-	phosphatase	-	-
15823	PTPRN	NM_002846.2	341	aggtgtctccgacaaactcatgt	195056	-	receptor activity, phosphatase	transmembrane receptor protein tyrosine phosphatase	diabetes(糖尿病)
15824	DUSP1	NM_004417.2	892	aggtcactaccagttacaagagc	195081	-	see also 2957 line		
15825	ACPP	NM_001099.2	115	tggctagaccgaagtgtactagc	195087	-	see also 685 line		
15826	GDC14A	NM_003672.2	1536	tggcctagatgatgtctctattg	195147	-	phosphatase, cell cycle	-	Alzheimer disease(アルツハイマー病)
15827	DUSP2	NM_004418.2	794	caggaggccataggcttcattga	195174	-	phosphatase, kinase related	protein tyrosine/threonine phosphatase	-

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15828	DUSP5	NM_004419.2	1029	ctgcatggcttacctatgaaga	195185	-	phosphatase, kinase_related	protein tyrosine/serine/thr eonine	-
15829	DUSP6	NM_001946.1	1212	tgggtcttggtagacatgcttgg	195194	-	phosphatase, kinase_related, cell_cycle	-	-
15830	DUSP7	NM_001947.1	634	ctggacgtgctcggcaagatag	195201	-	-	-	-
15831	EPH2A	NM_005670.2	1188	ctgcggctggctcagatattga	195227	-	phosphatase	-	myoclonic epilepsy(ミオクローヌス痙攣)
15832	MTMR1	NM_003828.1	701	gaggaaacttggcggcttcttata	195245	-	phosphatase	-	-
15833	MTMR6	NM_004685.2	2087	ccggcagataatcgttatagtga	195337	-	see also 3213 line	-	-
15834	PTP9Q22	NM_152422.3	708	atggttagagctctctactact	195352	-	phosphatase	-	-
15835	PTPLA	NM_014241.2	608	ttgaccacttgccatacttcatt	195408	-	see also 5552 line	-	-
15836	PTPN23	NM_015466.1	945	aagacgcgcttgcgttcaactatg	195435	-	phosphatase, signal_transduction	-	small cell lung cancer(肺癌)
15837	TENS1	NM_022748.6	1845	caggaccctcgattattatcgatgg	195464	-	phosphatase	-	-
15838	CDKN3	NM_005192.2	632	gagtttcgggacaaattagctgc	195505	-	kinase_related, phosphatase, cell_cycle	receptor- associated protein	-
15839	DUSP10	NM_007207.3	1498	aaggcaaacgaccaattatctcc	195533	-	see also 5013 line	-	-
15840	DUSP14	NM_007026.1	434	ctggccccaattgagatgtta	195543	-	phosphatase	protein tyrosine/serine/thr eonine	-
15841	DUSP16	NM_030640.1	879	cagaaggttgtagtttaacatca	195561	-	see also 8917 line	-	-
15842	DUSP4	NM_001394.4	1100	aaggacactatgaagacaagtgc	195600	-	phosphatase, kinase_related, cell_cycle	-	-
15843	DUSP9	NM_001395.1	900	cagaacctgtgcggttctttcc	195604	-	phosphatase, kinase_related	protein tyrosine/serine/thr eonine	-
15844	PPP1R3A	NM_002711.2	1490	acgtcggcatgtctcaagaatc	195652	-	see also 1765 line	-	-
15845	PPP1R3C	NM_005398.2	647	ctgacgtagactgtgtctatag	195725	-	phosphatase	-	-
15846	PPP2R1A	NM_014225.3	1464	tggcttgagatcatgtatatgc	195746	-	phosphatase, apoptosis, cell_cycle, transcription_regulat or,	protein phosphatase type 2A	-
15847	PPP2R1B	NM_002716.3	1235	ctgacgttcgttgaataatc	195777	-	phosphatase, apoptosis, cell_cycle, transcription_regulat or,	-	colorectal cancer(大腸癌), lung cancer(肺癌), melanoma(メラノーマ), colorectal cancers(結腸 直腸癌)
15848	PPP2R2A	NM_002717.2	1181	cagccatagtggtcgatatga	195825	-	phosphatase, signal_transduction	protein phosphatase type	-
15849	PPP1R3D	NM_006242.3	977	tggctgtgcgtacactttctcg	195848	-	phosphatase	-	-

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15850	DUSP21	NM_022076.2	293	cgggtgaagtggtcaacgatttc	195852	-	phosphatase	-	-
15851	FLJ20442	NM_017823.2	464	cagttctaccacgcgaacaaata	195867	-	phosphatase	-	-
15852	MGC1136	NM_024025.1	689	acgactctccagcctttgacatg	195870	-	phosphatase	-	-
15853	MGK-STYX	NM_016086.2	968	ctgcacatccggatagaagattc	195883	-	phosphatase	-	-
15854	MTMR2	NM_016156.2	658	ctgtcacgaattatagatttat	195903	-	-	protein tyrosine/serine/threonine	-
15855	SBF1	NM_002972.1	4879	ctgtgtccacaattacatgtat	195969	-	-	-	-
15856	SSH-3	NM_017857.2	1273	aaggagacgacgcgttcattga	195979	-	phosphatase	-	-
15857	SSH2	NM_033389.2	435	ggcgacacactaattatttgg	195998	-	see also 9415 line	-	-
15858	STYX	NM_145251.2	367	ttgtcttagcccatattcatc	196074	-	phosphatase	-	-
15859	CILP	NM_003613.1	2875	cagattgaggaggatcgataga	196112	-	see also 2428 line	-	-
15860	CTDP1	NM_004715.2	1053	cagggaacgggtgatgaatgc	196136	-	phosphatase	-	-
15861	DNAJC6	NM_014787.1	248	gggagctctttagtaacctaaa	196150	-	see also 5971 line	-	-
15862	FLJ22405	NM_022485.2	518	tggaacgctcaggctacactatt	196207	-	phosphatase	-	-
15863	ILVBL	NM_006844.3	315	atggtgcggttcttcttcacg	196220	-	-	-	-
15864	MTMR8	NM_017677.2	1590	cagcccaagcagagatgtctaga	196294	-	phosphatase	-	-
15865	PPAP2A	NM_003711.2	1197	gaggaggactctcacaactct	196344	-	see also 2535 line	-	-
15866	PPAP2C	NM_003712.2	351	togctcggacttcaacaactacg	196369	-	phosphatase	-	-
15867	RNGIT	NM_003800.1	810	tctgctggatggacatagagg	196386	-	see also 2598 line	-	-
15868	RSC1A1	NM_006511.1	1037	aagaatcttgcctctctataacg	196454	-	-	-	-
15869	TIPI	NM_130785.2	1193	togattctggtgatgtatgtga	196473	-	phosphatase	-	-
15870	INPP5A	NM_005539.2	1105	cggacaacgacccggaaggattg	196489	-	-	inositol-1, 4, 5-trisphosphate 5-phosphatase	-
15871	INPP5E	NM_019892.2	1768	cggaccgcgtcttctacagaagc	196503	-	phosphatase	-	-
15872	SKIP	NM_016532.2	1265	ggggctgcgggacggttaagtact	196524	-	phosphatase	-	-
15873	OCRL	NM_000276.3	1742	ctgttagcgccctcttccatt	196564	-	see also 227 line	-	-
15874	IMPA2	NM_014214.1	560	gtggcggtagcattggattgc	196593	-	phosphatase, signal transduction	myo-inositol-1(or 4)-monophosphatase	-
15875	INPP1	NM_002194.2	758	tggaccccatagattcaacttat	196614	-	phosphatase, signal transduction	inositol-1, 4-bisphosphate 1-phosphatase	-
15876	INPP4B	NM_003866.1	279	ctgtcgtgatcgtgaactgaat	196645	-	phosphatase, signal transduction	-	-
15877	BPNT1	NM_006085.3	235	atgatgtcagacgtgttattgc	196718	-	-	-	-
15878	FLJ20421	NM_017813.1	661	cagcgtccagatthaatacttgagg	196738	-	phosphatase	-	-
15879	INPPL1	NM_001567.2	2197	ggcgggttccgggacacacatg	196779	-	phosphatase	-	-
15880	MINPP1	NM_004897.2	293	cgcctaccoccccggtcaacaga	196801	-	phosphatase	-	-
15881	ACP2	NM_001610.1	491	gggcccattgcccggttatgagc	196831	-	phosphatase	acid phosphatase	-
15882	ACP5	NM_001611.2	800	gtgcggccacgacacatctgc	196848	-	phosphatase	acid phosphatase	-
15883	ACP6	NM_016361.2	734	ctgtgtgttcggaaccattctt	196857	-	phosphatase	-	-
15884	ACPT	NM_033088.2	961	ctggggatcccgcccaagatgg	196874	-	phosphatase	-	-

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15885	FLJ20331	NM_017768.3	643	cagctgggtcgactcaatctt	19884	-	see also 7149 line	-	
15886	FLJ23751	NM_152282.1	211	ccggtgtcactctcaagaatgg	196934	-	phosphatase	-	
15887	KIAA0377	NM_014659.1	2609	acgttcgaacggtctctctt	196995	-	see also 5829 line	-	
15888	KIAA0433	NM_015216.1	2612	acgttagatggctcaagtagaga	197060	-	see also 6279 line	-	
15889	FBP1	NM_000507.2	576	atggtatcttccaacatcattgc	197123	-	phosphatase	fructose- biphosphatase	diabetes mellitus(糖尿病)、lactacidemia(乳酸血症)、diabetes(糖尿病)
15890	FBP2	NM_003837.2	321	tgggtcaatctctctatagtacc	197134	-	phosphatase	fructose- biphosphatase	-
15891	G6PC	NM_000151.1	112	tgggtatccagtoaacacattacc	197144	-	phosphatase	glucose-6- phosphatase	atherosclerosis(粥状硬化症)、glycogen storage disease(グリコーゲン蓄積症)
15892	NT5C1A	NM_032526.1	693	ccgattcttcagcatgagaggg	197173	-	-	-	-
15893	NT5C1B	NM_033253.1	1020	aagtgagagtcggcttataaac	197185	-	-	-	-
15894	NT5C2	NM_012229.2	1711	cagctcacacgggtcaattagtga	197246	-	-	IMP-GMP specific 5'-nucleotidase	-
15895	NT5E	NM_002526.1	1397	ctgcagagtggtcggaatccatgt	197286	-	see also 1628 line	-	-
15896	NT5M	NM_020201.2	647	atgcctgggtggaggaagtacttt	197300	-	-	-	-
15897	GPD1	NM_001503.2	538	aggaccatggagagctattgattt	197312	-	see also 1032 line	-	-
15898	PLD1	NM_002662.1	2301	gggtctgtccatgctaactgaca	197434	-	signal transduction	phospholipase D	-
15899	PLD2	NM_002663.2	1652	tggaccggccttctgaagatttc	197485	-	see also 1743 line	-	-
15900	PLD3	NM_012268.1	1473	ctgcctgctggacacccattacc	197517	-	see also 5246 line	-	-
15901	BPGM	NM_001724.3	650	ctgccacggctcggaagcttaaa	197533	-	phosphatase	bisphosphoglycerat e phosphatase	hemolytic anemia(溶血性貧血)
15902	PGAM2	NM_000290.1	669	acggggatccccattgtgtatga	197553	-	phosphatase	phosphoglycerate mutase	myopathy(ミオパシー)
15903	PON1	NM_000446.3	154	gggtatacaccctgtaacttcc	197556	-	see also 351 line	-	-
15904	PON2	NM_000305.1	319	gggcacgggaattaagaatcagt	197598	-	phosphatase	arylesterase	atherosclerosis(粥状硬化症)、coronary artery disease(冠動脈疾患)、diabetes mellitus(糖尿 病)、elevated fasting plasma glucose in NIDDM(インスリン非依存型糖尿病)、diabetes(糖
15905	PON3	NM_000940.1	55	gagatgttctctggcgttttagaga	197614	-	-	arylesterase	-
15906	PHP14	NM_014172.2	629	ctgccagcagcagccatttcaact	197647	-	phosphatase	-	-
15907	PDE6A	NM_000440.1	548	atgtgcacactctaaagaatt	197656	-	see also 348 line	-	-
15908	PDE6B	NM_000283.1	1097	atgttccgtgtgacgaaatgttc	197699	-	signal transduction	cGMP-specific phosphodiesterase	congenital stationary night blindness(先天性夜 盲症)、retinitis pigmentosa(色素性網膜炎)
15909	PDE6C	NM_006204.2	2128	ttgttcagagtcgcaataatagc	197764	-	see also 4302 line	-	-
15910	PDE6G	NM_002602.1	335	ctgcacagagctggcccaatagtg	197779	-	-	enzyme inhibitor	-
15911	PDE6H	NM_006205.1	168	gggcagagctgcgccaattcaaga	197780	-	-	enzyme inhibitor	-
15912	PDE4A	NM_006202.1	1446	ggcagagctggcagatggaatca	197800	-	signal transduction	cAMP-specific phosphodiesterase	-
15913	PDE4B	NM_002600.2	373	ttgacaacgcttccaagcattgc	197817	-	see also 1680 line	-	-
15914	PDE4C	NM_000923.1	1445	cagacgtggccttattgtacaac	197863	-	signal transduction	cAMP-specific phosphodiesterase	-
15915	PDE4D	NM_006203.2	416	cagctcgcaactgtacgaaaca	197875	-	see also 4299 line	-	-
15916	PDE7A	NM_002603.1	421	caggcatatcttagatcttcacg	197930	-	see also 1682 line	-	-

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15917	PDE1C	NM_005020.1	715	gtggagatcatgacactgaaattt	197990	-	see also 3511 line		
15918	PDE3A	NM_000921.2	2563	caggcggctctataatacagtcg	198077	-	see also 599 line		
15919	PDE2A	NM_002599.1	478	aagtcgggagagctatcatctcc	198091	-		cGMP-stimulated cyclic-nucleotide phosphodiesterase	-
15920	PDE11A	NM_016953.2	2992	aagccgatctagattcagtagc	198167	-		signal transduction signal transduction	-
15921	PDE6D	NM_002601.1	551	ttgacgacgatctttttgtaagc	198179	-		3', 5'-cyclic- nucleotide phosphodiesterase	-
15922	ONP	NM_033133.3	935	gaggagtaagctcaacaagatgt	198185	-		2', 3'-cyclic nucleotide 3'- phosphodiesterase	-
15923	PLCB1	NM_015192.2	760	cagcgagatctctggcttaatga	198215	-	see also 6273 line		
15924	PLCB2	NM_004573.1	1428	gagattgccggcagcatcttgg	198288	-		1- phosphatidylinosito l-4, 5- bisphosphate phosphodiesterase	-
15925	PLCB3	NM_000932.1	1045	atgtaccgccaggcactactatg	198324	-	see also 606 line		
15926	PLCB4	NM_000933.2	340	tcggtcggggccataccaagg	198340	-	see also 6825 line		
15927	PLCE1	NM_016341.2	4418	cagctacccctctactactatta	198543	-			lung carcinoma(肺癌)
15928	PLCL1	NM_006226.1	2335	tagggcaatatacagataccattt	198684	-			
15929	PLCL2	NM_015184.2	1273	ttgccggagtggtgaattagatg	198737	-			
15930	FLJ11323	NM_018390.1	797	tgtgcgctgtatcaagaacatc	198784	-			
15931	FLJ31579	NM_153268.1	1284	aagtgccgcaaaactatccctc	198798	-			
15932	FLJ37451	NM_182569.1	642	gcggtataatogagaacacttaa	198820	-			
15933	KIAA1434	NM_019593.2	600	cagactgaataaagattactgtt	198847	-	see also 7721 line		
15934	MGC4171	NM_024307.1	785	gagacgtatgacgtaatagaa	198909	-			
15935	MIR16	NM_016641.3	487	ctgtctaatgcacgataacaca	198923	-	see also 6965 line		
15936	OBDFP	NM_017711.2	839	tggagttgtctctgtctact	198965	-	see also 7122 line		
15937	PP1665	NM_030792.4	1640	caggccctgctccatgcttaact	198985	-			
15938	SMPD3	NM_018667.1	1514	acgtgctgtggagatttcaac	199001	-	see also 7539 line		
15939	TDP1	NM_018319.2	2043	cggatacgcattgggaacatgtg	199053	-	see also 7400 line		
15940	LENG5	NM_024075.1	715	cggcgctccagctaaagact	199056	-			
15941	MGC2776	NM_025265.2	1400	tggcctaccattcttctgaagc	199089	-	see also 8888 line		
15942	POP1	NM_015029.1	2101	acggcccaactacgttaagcttg	199164	-	see also 6198 line		
15943	RNASEP1	NM_006638.1	93	ttgctagcactaacataacata	199177	-		ribonuclease P	-
15944	RPP20	NM_005837.1	361	gcgtctctagatctacatcca	199194	-		ribonuclease P	-
15945	RPP30	NM_006413.2	658	gtggattagctctgataactgt	199206	-		ribonuclease P	-



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15946	RPP38	NM_008414.1	179	ttgaggacagcgttaagctatt	199219	-	-	structural constituent of ribosome	-
15947	DLAD	NM_021233.2	1086	aggattagtattactatgaaa	199274	-	-	-	-
15948	APEX2	NM_014481.2	792	atgtaggcccttcattatgagc	199287	-	-	-	-
15949	EloA-BP1	NM_020695.2	551	ccggcagccacggcctattaaagc	199340	-	-	-	-
15950	FLJ12484	NM_022767.2	837	cagcacgggcacatcatcagtaga	199351	-	-	-	-
15951	FLJ12671	NM_030980.1	854	tggctgatgtagcattgtcaac	199365	-	-	-	-
15952	ISG20	NM_002201.4	592	aggacatgagcggctacacaatc	199377	-	-	-	-
15953	MGC16943	NM_080663.1	689	ttggacgattctcggataactgc	199397	-	-	-	-
15954	DFFA	NM_004401.1	91	ctggcggagatccggactcaag	199404	-	apoptosis	caspase-activated deoxyribonuclease	-
15955	DFFB	NM_004402.1	897	tggaaactggatcacataataga	199428	-	apoptosis	caspase-activated deoxyribonuclease	-
15956	KIAA0218	NM_014760.1	1634	ccggagccgcagtgatgattatt	199446	-	-	nuclease	-
15957	PLA2G13	NM_032562.1	230	cagtacaggtgccgatatgaaa	199470	-	-	calcium-independent cytosolic phospholipase A2	-
15958	PLA2G4A	NM_024420.1	1226	tggctccgactatttggagc	199504	-	see also 8618 line	-	-
15959	PLA2G6	NM_003560.1	366	aggctgacgccttagtgatttc	199539	-	see also 2367 line	-	-
15960	PRDX6	NM_004905.2	250	aagttagtgcccttccaataga	199564	-	-	phospholipase A2	Alzheimer disease(アルツハイマー病)
15961	CLC	NM_001828.4	148	gcgacacttgctctgttttga	199573	-	-	serine esterase	-
15962	LYPLA1	NM_006330.2	818	cagcttggtcaacagaaatgta	199596	-	-	-	atherosclerosis(粥状硬化症)
15963	PLA1A	NM_015900.1	356	ctcgtgcaacgaatgctaagt	199605	-	-	-	melanoma(メラノーマ)
15964	PLA2G4B	NM_005090.1	42	gggagcggaggtacagagaattcc	199624	-	-	-	-
15965	PLA2G4C	NM_003706.1	617	ctgaacctgaacatcgattacc	199647	-	-	-	-
15966	C11orf1	NM_006133.1	1628	aggatcgatggagtgattccaag	199673	-	-	-	-
15967	LOC22195	NM_139179.1	1655	gtggctgcggactgcaataaacc	199710	-	-	-	-
15968	PNLIP	NM_000936.1	469	cagtcggcgttcggttactcacc	199727	-	-	triacylglycerol lipase	diarrhea congenital(下痢)
15969	PNLIPRP1	NM_006229.1	277	cagaagagaccggttcacatcc	199756	-	-	triacylglycerol lipase	-
15970	PNLIPRP2	NM_005396.3	1200	aagtcacacgtgtgtctattgatg	199794	-	see also 3766 line	-	-
15971	AOAH	NM_001637.1	563	ctgcttagccgagatatgaatgc	199804	-	see also 1083 line	-	-
15972	APOC2	NM_000483.3	293	ctgcccgctgtagatgagaact	199839	-	-	lipoprotein lipase	hyperlipoproteinemia(高リポ蛋白血症)
15973	LIPA	NM_000235.1	1086	atgtctcagaagctcaatcttta	199865	-	-	sterol esterase	atherosclerosis(粥状硬化症)、Wolman disease(ウォルマン病)
15974	ACHE	NM_000665.2	1616	atgcgatactgggccaactttgc	199880	-	-	-	Alzheimer disease(アルツハイマー病)
15975	BCHE	NM_000055.1	964	cagaacgttgaaactagctaaat	199916	-	see also 29 line	-	-
15976	CACH-1	NM_130767.1	848	gggcccaggcggcgtcacatcaaca	199964	-	see also 9547 line	-	-
15977	GEL	NM_001807.2	372	gggacctgcccttatgatctgg	199991	-	-	sterol esterase	-
15978	CES1	NM_001266.3	1132	tggctggtgattccaatgttga	199999	-	-	serine esterase	rheumatoid arthritis(関節リウマチ)
15979	CES2	NM_003869.4	2424	tggcagactcactgttttgatc	200019	-	-	-	-

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15980	ESD	NM_001984.1	325	ctgtattggctctcaggttaac	200028	-	-	-
15981	NTE	NM_006702.2	2536	ccgacgctactcttaacagtga	200058	-	-	-
15982	PTE1	NM_005469.2	598	ttggcgtctcaaccgaattgtgc	200082	-	-	serine esterase
15983	THEA	NM_015547.2	623	cggcgcgcatcgccctgtctatgc	200088	-	-	see also 6461 line
15984	ZAP128	NM_006821.3	252	gagcgtccggctgtaccaatgg	200095	-	-	-
15985	PAFAH1B1	NM_000430.2	1266	acgtatgtgtacggcccaatacag	200131	-	-	see also 336 line
15986	PAFAH1B2	NM_002572.1	451	gggatacggggccattgtacaact	200155	-	-	see also 1654 line
15987	PAFAH1B3	NM_002573.2	817	cagccatcatgacatgtatgatt	200167	-	-	2-acetyl-1-alkylglycerophosphocholine esterase
15988	H6PD	NM_004285.1	1370	gggctacgctcgggatctgttca	200186	-	-	glucose-6-phosphate 1-dehydrogenase
15989	PGLS	NM_012088.1	763	ccgtgcccttcgagaagcattcc	200197	-	-	6-phosphogluconolactonase
15990	HIBCH	NM_014362.2	211	aaggttgccacgggagtcataaca	200203	-	-	-
15991	PPT1	NM_000310.1	729	tagattcggagtgatttgattt	200248	-	-	palmitoyl-protein hydrolase
15992	PPT2	NM_005155.5	996	atgagacacgggactacttgaag	200254	-	-	see also 3622 line
15993	HAGH	NM_005326.3	638	gagaaagcacggggtgaactga	200267	-	-	hydroxyacylglutathione hydrolase
15994	ARSB	NM_000046.2	1760	ccgcggaggtttgatacctact	200282	-	-	arylsulfatase
15995	ARSD	NM_001669.1	572	ctgaacacaggttgattctattt	200320	-	-	mucopolysaccharidosis (ムコ多糖体症)
15996	ARSE	NM_000047.1	874	aagaacgacaccccttattctgc	200349	-	-	arylsulfatase
15997	ARSF	NM_004042.3	872	acgagctggtacattatggtga	200381	-	-	arylsulfatase
15998	GALNS	NM_000512.2	1519	gtgcaactggcggtcatgaact	200414	-	-	N-acetylgalactosamine-4-sulfatase
15999	STS	NM_000351.2	288	aagcatcaaggccgaacatcatc	200416	-	-	steryl-sulfatase
16000	IDS	NM_000202.2	1152	aagacgtccaagccttaaacatc	200479	-	-	see also 160 line
16001	GNS	NM_002076.1	1229	ttgctggctacgacctaaataag	200527	-	-	see also 1340 line
16002	DKFZp313	NM_198150.1	589	caggcccatggttaattctatcc	200565	-	-	-
16003	KIAA1001	NM_014960.1	842	gggttaagctcactgggataatag	200601	-	-	-
16004	SGSH	NM_000199.2	116	ttgagagtgccggtacacaaac	200614	-	-	see also 159 line
16005	SULF1	NM_015170.1	3001	ctgtgcttgacgaggtcttaaca	200673	-	-	see also 6263 line
16006	SULF2	NM_018837.2	1250	tggacaacacgcatcatgtatcac	200696	-	-	-
16007	G14orf126	NM_080664.1	253	atggcaagcatgtctctatattg	200718	-	-	-
16008	FLJ11106	NM_018324.1	1068	tggatcctgcgaaagagaaatta	200759	-	-	-
16009	HARS2	NM_080820.3	492	caggccggagccttcaaaagatg	200777	-	-	-
16010	HYAL2	NM_003773.2	889	ccgccatggcccaactttgtga	200799	-	-	receptor activity
16011	HYAL3	NM_003549.2	888	tggcaatggctggcctatgtatgg	200798	-	-	non-small-cell lung cancer (非小細胞肺癌)
16012	SPAM1	NM_003117.3	684	tggctactactcctacatagatt	200881	-	-	non-small-cell lung cancer (非小細胞肺癌)

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16013	HEXA	NM_000520.2	1104	ctggacatcgtctcttcttctg	200925	-	beta-N-acetylhexosaminidase	GM2 gangliosidosis (GM2 ガングリオシドーシス)
16014	HEXB	NM_000521.2	1681	atgtcgcaacgtggaatagctgc	200974	-	beta-N-acetylhexosaminidase	GM2 gangliosidosis (GM2 ガングリオシドーシス)、motor neuron disease (運動ニューロン疾患)、juvenile spinal muscular atrophy (若年性脊髄性)
16015	NAGPA	NM_016256.1	602	ggctcgtggtcgtgattcgtaat	200976	-	-	-
16016	NAGLU	NM_000263.2	1898	cggccgtcctctacagatgaatc	200994	-	-	-
						-	see also 206 line	
16017	NAGA	NM_000262.1	1102	ctggcgttaactatgatgacatcc	201009	-	alpha-N-acetylglactosaminidase	alpha-galactosidase deficiency (アルファガラクトシダーゼ欠損症)
16018	MAN2A1	NM_002372.1	1356	tcggtccggctgggctattgac	201042	-	see also 1525 line	
16019	MAN2A2	NM_006122.1	1941	gtgatgacactccttaagtca	201155	-	mannosyl-oligosaccharide 1,3-1,6-alpha-mannosidase	-
16020	MAN2B1	NM_000528.1	2233	tgttacaacgccagttagtga	201200	-	alpha-mannosidase	mannosidosis (マンノシドーシス)
16021	MAN2C1	NM_006715.1	2556	cagcactaccacactacaatac	201228	-	-	-
16022	MANBA	NM_005908.2	2004	ccgtatcgccagcagatagtg	201295	-	beta-mannosidase	mannosidosis (マンノシドーシス)
16023	GAA	NM_000152.2	1195	ctgcccctgcagtataccacagg	201311	-	alpha-glucosidase	glycogen storage disease (グリコーゲン蓄積症)
16024	MGAM	NM_004668.1	4171	gtggagctatcgagcttatgt	201411	-	glucan 1,4-alpha-glucosidase	-
16025	SI	NM_001041.1	5410	atgcagttacttaacgataaac	201607	-	Hepatocyte nuclear factor 1	disaccharide intolerance (二糖類不耐症)
16026	GCS1	NM_006302.1	958	atggtaaagagtcgcctaaatag	201619	-	mannosyl-oligosaccharide glucosidase (processing A-glucosidase I)	glucosidase I deficiency (グルコシダーゼI 欠損症)
16027	AGL	NM_000028.1	3812	ctgattactggacgctatgtaga	201738	-	-	glycogen storage disease (グリコーゲン蓄積症)
16028	KIAA1128	NM_018999.1	1076	atggccaccacacagagatatttt	201793	-	-	-
16029	NEU1	NM_000434.2	724	tggaccgggctctgtgtattcaga	201831	-	exo-alpha-glucosidase	neuraminidase deficiency (ノイラミニダーゼ欠乏)
16030	NEU2	NM_005383.1	1070	atgattacgagagattgtcttt	201843	-	exo-alpha-glucosidase	-
16031	NEU3	NM_006656.4	2043	gggggttgacctaggtatctatc	201865	-	exo-alpha-glucosidase	-
16032	FLJ90231	NM_173581.1	328	gggagccctatcctactaaat	201877	-	-	-
16033	GLB1	NM_000404.1	583	cagaatggaggccagttataac	201894	-	beta-galactosidase	GM1 gangliosidosis (GM1 ガングリオシドーシス)、mucopolysaccharidosis (ムコ多糖体症)
16034	LOC11293	NM_138416.1	1043	atggctattcaataagataaa	201937	-	-	-
16035	LOC89944	NM_138342.2	712	aagcgtggggacactcattcgc	201943	-	-	-
16036	GLA	NM_000169.1	406	gggattcgccagctagctaatta	201964	-	-	-
16037	GBE1	NM_000158.1	528	cggagagatcttgcattgattt	202010	-	-	-
16038	SLC3A1	NM_000341.2	1439	tcgcatttggggaatcagttatgt	202100	-	cystine transporter AP-1 (c-Jun homodimer)	cystinuria (システチン尿症)
16039	SLC3A2	NM_002394.3	1204	caggttgggacatagagaatct	202132	-	-	-

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16040	LOC12953	NM_174898.1	373	aagacgtcacgacctgaactact	202139	-	-	-	-
16041	LYG2	NM_175735.3	715	ttgctcagcctaagtctctataa	202164	-	-	-	-
16042	LYZ	NM_000239.1	259	tagccgctacttggtgtaagtgc	202167	-	-	structural molecule	amyloidosis(アミロイドーシス)
16043	PARG	NM_003631.1	1225	taggaacacgtactctactaagg	202200	-	-	see also 2442 line	-
16044	GUSB	NM_000181.1	1644	gagtagcagcagcaaacgattgc	202257	-	-	-	-
16045	HPSE	NM_006665.2	1182	gagcgagcgcgccttgctatcc	202286	-	-	beta-glucuronidase	mucopolysaccharidosis(ムコ多糖体症)
						-	-	see also 4713 line	-
16046	IDUA	NM_000203.2	846	gcgtgcggctgagactacatccc	202319	-	-	L-iduronidase	Hurler syndrome(ハラー症候群)、Hurler-Scheie syndrome(ムコ多糖症)、mucopolysaccharidosis(ムコ多糖体症)、Scheie
16047	GBA	NM_000157.1	568	ctgaagaaggaataggataaac	202320	-	-	glucosylceramidase	Gaucher disease(ゴーシェ病)
16048	GALC	NM_000153.1	1210	gtggcactactgtgtagaatct	202354	-	-	galactosylceramidase	-
16049	FUCA1	NM_000147.2	641	cagagctgtagacacctgttaac	202390	-	-	alpha-L-	Krabbe disease(クラビエ病)
16050	TREH	NM_007180.1	1243	cggagcctgtgttcgattacgacc	202429	-	-	alpha, alpha-trehalase	fucosidosis(フコシド症候群)
16051	LOT	NM_002299.2	2711	cgggacgtttcgggagatcttc	202488	-	-	-	trehalase deficiency(トレハラーゼ欠損症)
16052	CSMD1	NM_033225.1	475	acgggcagcgcgaataggatata	202552	-	-	lactase	hypolactasia, adult type(成人型乳糖分解酵素欠損症), disaccharide intolerance(二糖類不耐)
16053	G2AN	NM_014610.3	388	ttgttgctgataccaccaatagc	202791	-	-	see also 9383 line	-
16054	GBA3	NM_020973.2	1092	tgttaccatggggagtgatgaaa	202868	-	-	see also 5777 line	-
16055	KL	NM_004795.2	688	tcggcggctcaggtcaagtactgg	202880	-	-	-	-
16056	LOC15283	NM_175737.2	185	atgtccacgggggattgcaaaag	202950	-	-	see also 10149 line	-
16057	RIMS3	NM_014747.1	1047	cagccacctatacaagatttac	203019	-	-	-	-
16058	UNG	NM_003362.2	897	aggaagcggcaccatgatttaca	203037	-	-	-	-
16059	BST1	NM_004334.1	893	cagtacagctgtattatgatta	203055	-	-	NAD+ nucleosidase	rheumatoid arthritis(関節リウマチ)
16060	CD38	NM_001775.2	298	tggcgcgatgcgtcaagtacact	203059	-	-	signal transduction, apoptosis	leukemia(白血病), diabetes mellitus(糖尿病), diabetes(糖尿病)
16061	ASML3B	NM_014747.1	779	gtgctgaccgcatgcacaaagc	203088	-	-	NAD+ nucleosidase	-
16062	CTBS	NM_004388.1	933	ggggctctattataactata	203132	-	-	hydrolase, acting on glycosyl bonds	-
16063	FLJ21865	NM_022759.1	208	cggacccctgcgcagtagatat	203140	-	-	hydrolase, acting on glycosyl bonds	-
16064	SMPDL3A	NM_006714.2	510	ggcgtgggtaatacatgactattg	203164	-	-	hydrolase, acting on glycosyl bonds	-
16065	TDG	NM_003211.2	587	tggcataaacccgggactaatgg	203212	-	-	pyrimidine-specific mismatch base pair DNA N-glycosylase	-
16066	PIGL	NM_004278.2	257	aggagagactgtaagaagaagac	203233	-	-	N-acetylglucosaminyl phosphatidylinositol deacetylase	-
16067	ASAHI	NM_004315.2	352	cagttccatggatcacaccataaat	203246	-	-	-	Farber lipogranulomatosis(脂肪肉芽腫症)

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16068	AGA	NM_000027.2	398	tgggtggcagcgaagactctgg	203277	-	-	N4-(beta-N-acetylglucosaminyl)-L-asparaginase	aspartylglycosaminuria(アスパルチルグルコサミン尿症)
16069	ASRGL1	NM_025080.2	836	cggacctatcgttgggttatatg	203313	-	-	-	-
16070	C20orf13	NM_017714.1	544	aagctctcgtcgtcgagaattcc	203327	-	-	see also 7123 line	-
16071	ASPA	NM_000049.1	672	aagtactcgttggtatagaagt	203338	-	-	see also 17 line	-
16072	GA	NM_013267.2	1244	atgccatcgtgctattatctcaag	203389	-	-	glutaminase	-
16073	GLS	NM_014905.2	1971	cagcggactatgattctagaac	203454	-	-	glutaminase	-
16074	FLJ31204	NM_174912.2	1118	tgtgttcacattgaacatt	203479	-	-	-	-
16075	QRSL1	NM_018292.2	1299	gtgagacgcctcattgctaaga	203526	-	-	-	-
16076	UPB1	NM_016327.1	735	cgggaagatcgggtgaacattt	203543	-	-	enzyme	-
16077	VNN3	NM_018399.2	337	gagcattaccctctctagagg	203557	-	-	see also 7446 line	-
16078	ADA	NM_000022.1	1031	acgggacatgggcttactgaag	203590	-	-	Smad3/Sp-1 heterodimer	immunodeficiency(免疫不全症)
16079	AMPD1	NM_000036.1	722	gtgtatttaactgctctcctaatt	203611	-	-	AMP deaminase	exercise-related myopathy(アデニル酸脱アミノ酵素欠損症)、myoadenylate deaminase deficiency(アデノシンデアミナーゼ欠損症)
16080	AMPD2	NM_004037.5	855	ccgtagtcccgctaggttcc	203657	-	-	see also 2728 line	-
16081	AMPD3	NM_000480.1	2213	gagtcggtattgcagtatctct	203703	-	-	see also 375 line	-
16082	ATIC	NM_004044.4	1205	atgggtcgtcgacaaagtcatta	203746	-	-	phosphoribosylaminimidazole-carboxamide formyltransferase	dystonia ジストニー(先天性角化異常症)、phenylketonuria(フェニルケトン尿症)、Segawa syndrome(Segawa症候群)、Parkinson disease(パーキンソン病)
16083	GCH1	NM_000161.1	492	atgtcctaaacagatgctatattt	203768	-	-	GTP cyclohydrolase I	-
16084	DDAH1	NM_012137.2	652	tcgcaattgggtctagtaattct	203788	-	-	see also 5147 line	-
16085	DDAH2	NM_013974.1	606	gggctcgaattgtggaataag	203798	-	-	signal transduction	-
16086	GRMP1	NM_001313.2	405	atggtattccggaggattiga	203802	-	-	dimethylargininase	-
16087	DPYS	NM_001385.1	1187	aagatcggatgtcgttaattgg	203839	-	-	dihydropyrimidinas	-
16088	DPYSL3	NM_001387.1	1523	cagccgtctctccgactatgtct	203895	-	-	dihydropyrimidinas	-
16089	IGSF2	NM_004258.1	2331	cagcgatcggggcacaatacact	203932	-	-	see also 954 line	-
16090	MGC35366	NM_152435.1	1319	cagttcggaggccatcatgaatt	203960	-	-	signal transduction	-
16091	NIT1	NM_005600.1	735	cagagatacttaactatcttcca	203967	-	-	see also 3892 line	-
16092	BDT	NM_000060.1	655	ttgaccgtaccgttaacacacac	203979	-	-	see also 35 line	-
16093	NIT2	NM_020202.2	577	aggctgccagctgttggtatctc	204012	-	-	-	-
16094	VNN1	NM_004666.1	1179	gtggaaggcgcctattatctaca	204036	-	-	hydrolase, acting on carbon-nitrogen (but not peptide) bonds	-
16095	VNN2	NM_004665.2	223	agggtgctcgaatcattgtgact	204057	-	-	-	-
16096	ABHD6	NM_020676.3	913	agggtccgacgacatcatctgg	204107	-	-	see also 7915 line	-
16097	ABHD7	NM_173567.2	543	tagattcttaggtatagcaaa	204121	-	-	-	-

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16098	ABHD8	NM_024527.2	201	cgggtgaccgacggtatctct	204140	-	-	-	-
16099	ABHD9	NM_024794.1	810	atgtoggtgtaccagactattc	204153	-	-	-	-
16100	EPHX1	NM_000120.2	1071	cagcggttcgggaggtttctgg	204173	-	-	-	-
16101	EPHX2	NM_001979.3	284	gtgtccgagaccgctaaggtct	204185	-	-	-	-
16102	MEST	NM_002402.2	706	togatctgtgtggcttaccataa	204226	-	-	-	-
16103	AHCY	NM_000687.1	1021	tggaccggtatcaggtgaagaat	204243	-	-	-	-
16104	AHCYL1	NM_006621.3	1465	aagtogtgtgttaataacttgc	204272	-	-	-	-
16105	KIAA0828	NM_015328.1	527	cagcggttcataacagatagc	204296	-	-	-	-
16106	FAH	NM_000137.1	978	atgagccaggaggctacacatag	204340	-	-	-	-
16107	GPA1	NM_003801.2	612	cagattttattggcccaagatat	204346	-	-	-	-
16108	AADAC	NM_001086.1	116	gtggggtctctcatagcatatta	204352	-	-	-	-
16109	ABHD1	NM_032604.2	1003	ccgtacaatccgcagtttgatg	204400	-	-	-	-
16110	ABHD4	NM_022060.1	933	gggtccgacacacctgagatagac	204417	-	-	-	-
16111	ACATE2	NM_012332.1	819	ggggaccaccatcacatgagatgt	204445	-	-	-	-
16112	ADPRHL1	NM_138430.3	306	ctgtgctgtgagatctgtacc	204464	-	-	-	-
16113	ADPRHL2	NM_017825.1	847	cagtgaccaccgccatctactgc	204478	-	-	-	-
16114	ASAH1	NM_014435.1	577	ttggctatgtaggattatggact	204488	-	-	-	-
16115	ATP5C1	NM_005174.1	674	atgagtatctatgacgatattga	204505	-	-	-	-
16116	ATP5D	NM_001687.3	370	aggagggcaccaccctccaaatac	204516	-	-	-	-
16117	ATP5O	NM_001697.1	595	gtgcgcatggcgagaaatattgt	204531	-	-	-	-
16118	ATP6AP2	NM_005765.2	146	tggggaacgagtttagtatatta	204540	-	-	-	-
16119	ATP6V0B	NM_004047.2	670	gggggtcatctgtcgcaattctca	204578	-	-	-	-
16120	ATP6V0D1	NM_004691.3	244	ctgcaagacactgattatgtaa	204580	-	-	-	-
16121	ATP6V1D	NM_015994.2	715	ttgaacgtactcttgcattatc	204598	-	-	-	-
16122	ATP6V1G1	NM_004888.2	357	ccggcagaacacaggatgaagtct	204607	-	-	-	-
16123	ATP6V1G2	NM_130463.2	435	cagagcgcgagacacgaattcc	204613	-	-	-	-
16124	ATP6V1G3	NM_133262.2	361	tggacactacaataagtatagg	204623	-	-	-	-
16125	BPHL	NM_004332.1	582	gggggcatataccgcaactcattgc	204630	-	-	-	-

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16126	C11orf8	NM_001584.1	191	aggcattccagcactacacatc	204644	-	-	hydrolase	-
16127	C22orf147	NM_152667.1	583	gtatgctgctgacacattaga	204686	-	phosphatase	-	-
16128	C22orf1	NM_001585.2	970	gggacgacccactatgtgaatgc	204695	-	-	-	-
16129	CHI3L1	NM_001276.1	468	gagtcgcggactttcatcaagt	204700	-	-	hydrolase	rheumatoid arthritis(関節リウマチ)
16130	CHI3L2	NM_004000.1	732	gggccaagctcctactacaatgt	204728	-	-	hydrolase	-
16131	DBR1	NM_016216.1	977	gggctacggatgattcttattat	204760	-	-	-	-
16132	DIO3	NM_001362.1	337	gtatccgcgaagcaatttctctgg	204778	-	-	thyroxine	-
16133	DKFZP564D1378	NM_032124.3	809	gggaaatatcgagcatcagatga	204790	-	-	-	-
16134	O243	NM_015407.3	470	tgggaactcggcaccttcaaaagg	204793	-	-	-	-
16135	DPYSL4	NM_006426.1	1287	tctgcgcggtgaccagtcacaaat	204796	-	see also 4499 line	-	-
16136	DPYSL5	NM_020134.2	896	tggtaaacgtgtccagtattctcg	204818	-	-	-	-
16137	ENPP4	NM_014936.1	1262	cagaagccatcgcgattgttctc	204861	-	see also 6119 line	-	-
16138	ENPP5	NM_021572.4	1216	aggcaaccacgggttacgataatg	204904	-	-	-	-
16139	ENPP6	NM_153343.2	1197	aggtcgggtggcgcgtctacaatgt	204952	-	-	-	-
16140	EYA1	NM_000503.3	807	cagccgacgggtctttaacaat	204960	-	see also 390 line	-	-
16141	EYA2	NM_005244.3	363	cagcaggctacccctatacagc	205003	-	phosphatase, transcription_regulat or	-	-
16142	EYA3	NM_001990.2	1156	aggaccccaacagctagtattgg	205046	-	see also 1273 line	-	-
16143	EYA4	NM_004100.2	1596	ctgctcacccgggtcttattcacac	205086	-	see also 2769 line	-	-
16144	FAM16AX	NM_012080.1	343	ccgcgtcgttgatgaagaca	205122	-	-	-	-
16145	FLJ1151	NM_018340.1	1008	acgatctatggtattgattcaag	205132	-	-	-	-
16146	FLJ11342	NM_018394.1	646	aggagttataaacgttcagtaca	205162	-	-	-	-
16147	FLJ21736	NM_024922.3	489	ccggtaggccggtcatgattgag	205176	-	-	-	-
16148	FLJ31547	NM_145024.1	379	ctgcacgccctgggataaacttg	205196	-	-	-	-
16149	GNPDA1	NM_005471.2	785	aggtgggacgagctatttgg	205225	-	-	hydrolase	-
16150	KIAA1363	NM_020792.1	868	tgtgcaggcaatgatcgttaac	205251	-	see also 7970 line	-	-
16151	LHPP	NM_022126.2	520	tggacgttggtcctcacatgaag	205270	-	-	-	-
16152	LOC13414	NM_138809.2	245	atggctaaccgaagcttatcttg	205275	-	-	-	-
16153	LOC33922	NM_178543.2	788	tggcgaacctggtgaattccaca	205294	-	-	-	-
16154	MASA	NM_021204.1	493	aggccctggtagataatgtgtgc	205305	-	-	-	-
16155	MGC12904	NM_031219.2	1448	agggattctgtacctaaagaaca	205324	-	phosphatase	-	-
16156	MGC3234	NM_023947.2	434	gagactggccgtgagatgttg	205328	-	-	-	-
16157	MPPE1	NM_023075.2	1963	tgtctcgaaagcgttaagacaag	205355	-	-	-	-
16158	OVGP1	NM_002557.2	1301	cggcatggaacacatgatagtaag	205388	-	-	hydrolase	-
16159	PIGO	NM_032634.2	3523	gtgtttgcccctaagtctatt	205464	-	see also 9265 line	-	-
16160	PLP	NM_020315.3	202	cggcaaggcggctctgtttgga	205466	-	-	-	-
16161	SGPP2	NM_152386.2	232	aagtaactgtgaagaattatt	205470	-	-	-	-
16162	THEM2	NM_018473.2	465	gtgtcgatatgaacataacgtac	205508	-	-	-	-
16163	VPS29	NM_016226.2	578	aagtagaacgaatgaatacaaa	205526	-	-	-	-
16164	COL4A3B	NM_005713.1	2203	aagcagagatctcctaattct	205574	-	see also 3962 line	-	-
16165	CSNK2B	NM_001320.5	895	caggctctacgggttcaagatcc	205588	-	see also 872 line	-	-

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16166	PRKDC	NM_006904.6	11629	atgtataagcgctgaatcgtac	205894	-	see also 4842 line		
16167	PRKAG1	NM_002733.1	297	gtgtacgagctgccctttatgg	205912	-	see also 1772 line		
16168	CKS2	NM_001827.1	145	acgagtacggcatgttatgtta	205934	-	kinase_related, cell_cycle	cyclin-dependent protein kinase	-
16169	PRKAG3	NM_017431.1	764	tggctctgcacgcgtactactacagg	205945	-	kinase_related	SNF1A/AMP- activated protein kinase	-
16170	GTF2H1	NM_005316.2	1711	aagcacaaaatttgtaagtacaca	205964	-	-	general RNA polymerase II transcription factor	-
16171	BCR	NM_004327.2	2999	cagccgcacacggcaagagtaca	205971	-	kinase_related	-	leukemia(白血病), chronic myeloid leukemia(慢性骨髓性白血病), chronic myelogenous leukemia(慢性骨髓性白血病), Ewing's
16172	BRD2	NM_005104.2	3926	atgtcagcggacagcctcaattct	206009	-	kinase_related	protein serine/threonine kinase	-
16173	FASTK	NM_006712.3	1036	tggctacagtcacacatttgatg	206017	-	-	-	-
16174	H11	NM_014365.2	966	aggtgatctctgtgacagatttt	206024	-	kinase_related	protein serine/threonine kinase	-
16175	EFNA4	NM_005227.2	229	ctgggcctcaacagattaccta	206031	-	see also 3664 line	-	-
16176	EFNB3	NM_001406.3	784	ccgctcgccaccagctactactaca	206048	-	receptor_activity	transmembrane- ephrin receptor	neuroblastoma(神経芽細胞腫)
16177	NRP2	NM_003872.1	774	tggctctctgcgcgtactacc	206068	-	see also 2633 line	-	-
16178	FGFRL1	NM_021923.2	966	ccgacggctctctactcctaataag	206105	-	receptor_activity	-	-
16179	PDGFRL	NM_006207.1	718	tggacagcagcattgtttatgaca	206125	-	receptor_activity	-	-
16180	IGF2R	NM_000876.1	6206	acggagctctcgctactataaat	206285	-	see also 572 line	-	-
16181	CRKL	NM_005207.2	535	cggacccgctccgcctggtatatg	206306	-	kinase_related,	protein tyrosine kinase	-
16182	WIF1	NM_007191.2	249	aggcaagagctactctataggattt	206333	-	signal_transduction	-	-
16183	C9orf39	NM_017738.1	2846	aagcttactctctctatgatcaag	206417	-	see also 4987 line	-	-
16184	KCNH2	NM_000238.2	1845	atgtgacggcgcctctctctacc	206435	-	see also 174 line	-	-
16185	KCNH3	NM_012284.1	2416	gcggcgacaaatacccttatgtcc	206450	-	-	-	-
16186	KCNH4	NM_012285.1	1198	cagtcggccaggtgaatctctgc	206463	-	channel,	-	-
16187	KCNH8	NM_144633.2	1441	togatcgaagtgccttatattgc	206516	-	signal_transduction	-	-
16188	ATR	NM_001184.2	6429	ccgctccgatcgtgtacaaatga	206764	-	kinase_related, cell_cycle	-	Seckel syndrome(ゼッケル症候群)
16189	CDK5R1	NM_003885.2	283	cggccaccgtggcccaactatcag	206826	-	kinase_related, cell_cycle	cyclin-dependent protein kinase 5 activator	-



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16190	CDKN1A	NM_000389.2	235	gcgatgaacttcgaattgtca	206829	kinase_related, cell_cycle, apoptosis	bladder transitional cell carcinoma(膀胱移行上皮癌)、laryngeal cancer(喉頭癌)、colorectal cancer(大腸癌)、bladder cancer(膀胱癌)、ovarian cancer(卵巣性卵巢癌)、prostate cancer(前立腺癌)、colorectal cancers(結腸直腸癌)、non-small-cell lung cancer(非小細胞肺癌)、squamous cell carcinomacytic(扁平上皮細胞癌)、gastric cancer(胃癌)
16191	PIK3C2A	NM_002645.1	3064	cagtttagtaccgatacgaaca	206921	see also 1719 line	
16192	PIK3C2B	NM_002646.2	4822	aggagctaaacgggttacaatcgg	207041	kinase_related	phosphatidylinositol 3-kinase, class
16193	PIK3C2G	NM_004570.2	4394	ctgtagtgtccactcgataaag	207171	see also 3107 line	
16194	PIK3C3	NM_002647.2	1738	acgcgaagtggaatcgtaaga	207237	see also 1728 line	
16195	PIK3CA	NM_006218.1	2968	aagcttatctagctattogaca	207342	see also 4306 line	
16196	PIK3CB	NM_006219.1	1310	ctgtagcgtgggttaatacagtg	207382	see also 4313 line	
16197	PIK3R2	NM_005027.1	1664	cagatgaagcgtactgcaattga	207536	kinase_related	phosphatidylinositol 3-kinase
16198	MGC26597	NM_152700.2	1432	aagtgtaaatcgacactcaaga	207545	kinase_related	
16199	MGC46424	NM_173492.1	322	gtgctgaaggagacctcaacttca	207550	kinase_related	
16200	PIP5K1A	NM_003557.1	1373	gagcccttaagcagtgaaacaca	207555	kinase_related, signal_transduction	
16201	PIP5K1B	NM_003558.1	669	aagacatacgtccattagcatt	207559	see also 2365 line	
16202	PIP5K1C	NM_012398.1	254	ccggcgaaacccactacaagaag	207601	kinase_related	
16203	PIP5K2A	NM_005028.3	770	atgtaccgggcttaattgtgatgg	207626	kinase_related	phosphatidylinositol 1-4-phosphate 5-kinase
16204	PIP5K2C	NM_024779.3	341	aggaaacctcgtgctgatttgg	207664	see also 8742 line	
16205	IHPK1	NM_153273.1	715	aggacccgaagctctacaagttc	207687		
16206	IHPK2	NM_016291.1	384	aggaaactgtgtctaatagcata	207699	kinase_related	
16207	IHPK3	NM_054111.1	1271	cagagttcaatccgcttctattc	207720	kinase_related, apoptosis	
16208	IPMK	NM_152230.1	1165	gtgttcctcctagcaacaataaga	207761	kinase_related	
16209	PIK4CB	NM_002851.1	361	ggagatccgttccttagatgctcc	207772	see also 1733 line	
16210	FRAP1	NM_004958.2	3674	ctgtggacacccgaatcaatca	207868	see also 3446 line	
16211	PI4KB	NM_018323.2	568	ggaccttatgttcaactcaatcc	207950	kinase_related	
16212	SMG1	NM_014006.2	8210	atcgccgcttattgaactaacc	208207	kinase_related	
16213	DGKH	NM_152910.3	3387	cagaagcaccgtatttogaataag	208357	kinase_related	
16214	DGKI	NM_004717.2	2348	ggagactgcccgtatgtacataga	208409	kinase_related	diacylglycerol kinase
16215	FLJ10842	NM_018238.2	986	cagcttgaccgcgaagcaaaaga	208449	see also 7339 line	
16216	CHK	NM_001277.1	554	tgttcttgagagcgttatgtt	208455	see also 842 line	
16217	FLJ10761	NM_018208.1	558	caggttaatcgccttagaataag	208481	kinase_related	
16218	XYLB	NM_005108.2	1336	gttgaggttgcgagcactaatga	208513	kinase_related	

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16219	RBSK	NM_022128.1	216	acgtccatgtgtgttaagttgg	208527	-	see also 8291 line	-	-
16220	FLJ13052	NM_023018.2	383	aggagacacagctcttctcagg	208551	-	kinase_related	NAD+ kinase	-
16221	KHK	NM_000221.1	82	aggaggaactcggagataaggtgt	208562	-	kinase_related	-	fructosuria(果糖尿症)
16222	DKFZP586					-			
16222	B1621	NM_015533.2	1587	aggagctgctctgttacaagtcc	208587	-	see also 6455 line	-	-
16223	EK1	NM_018638.3	670	gtcacacacactctactgtacc	208596	-	kinase_related	choline kinase	-
16224	FLJ11149	NM_018339.3	544	atggaaccatattacaagaata	208627	-	kinase_related	-	-
16225	PDXK	NM_003681.2	602	tgttccgttcgcagacattatc	208645	-	kinase_related	protein binding	-
16226	POLR2L	NM_021128.2	190	gagaagctgtcctaattatgcacc	208702	-	transcription_regulat	DNA-directed RNA polymerase III	-
16227	POLR3D	NM_001722.1	549	gaggaaacgacactcgaaatgac	208704	-	transcription_regulat	-	-
16228	POLR3F	NM_006466.2	263	cagcgggcagtagccatcaatag	208717	-	transcription_regulat	DNA-directed RNA polymerase III	-
16229	RPC5	NM_018119.2	2139	ccgggtacgcggaaacatgatcc	208765	-	see also 7264 line	-	-
16230	USP49	NM_004275.2	245	cagaccgggaagctgctgtatgt	208773	-	transcription_regulat	-	-
16231	POLD2	NM_006230.1	513	aggcaccattgacgctgtcaaacg	208786	-	or	zeta DNA polymerase	-
16232	POLD4	NM_021173.1	86	ggcgtcatcactgattcctacc	208801	-	-	delta DNA polymerase	-
16233	POL1	NM_007195.1	521	gtgtgggtcgtgtatacaataa	208818	-	see also 4999 line	-	-
16234	CDS2	NM_003818.2	552	atgtcgttcagattaaagtttt	208877	-	transcription_regulat	phosphatidate	-
16235	GALT	NM_000155.2	1053	ctggcactgtccggaaattcatg	208918	-	or	cytidyltransferas	-
16236	PCYT1A	NM_005017.2	645	ctggccgaacacccggattgattt	208933	-	-	choline-phosphate	-
16237	PCYT1B	NM_004845.2	421	tcgctacgtagacgaagtatca	208954	-	-	cytidyltransferas	-
16238	CMAS	NM_018686.3	999	atgctattgggataagtttatfa	208985	-	see also 7561 line	choline-phosphate	-
16239	NMNAT2	NM_015039.2	549	ctggccgtccagaattctgattg	209021	-	see also 6200 line	cytidyltransferas	-
16240	UGP2	NM_006759.2	755	gtgatattacgccagttttctac	209050	-	see also 4768 line	cytidyltransferas	-
16241	UAP1	NM_003115.3	1077	gtggcagaccacacggttcattgg	209094	-	-	UDP-N-acetylglucosamine pyrophosphorylase	-
16242	PCYT2	NM_002861.1	981	gtgtcacggcgaagcagagaatta	209130	-	see also 1904 line	-	-
16243	FPGT	NM_003838.1	801	gggtgacattgcgactcttaaa	209156	-	-	-	-
16244	GMPPA	NM_013335.2	503	caggacgcgaatccctcaactacg	209197	-	see also 5403 line	-	-
16245	GMPPB	NM_013334.2	1283	tgggtgagagacgctcatgtaatt	209211	-	see also 5402 line	-	-
16246	NMNAT3	NM_178177.2	878	atgagatcagtgccacatacatc	209221	-	-	-	-
16247	DLG2	NM_001364.1	720	ttgtatcttgcgggtgaatgagg	209229	-	see also 925 line	-	-
16248	DLG3	NM_021120.1	2213	ccggcctcgactgtaataatgagg	209305	-	see also 8095 line	-	-
16249	MAGI-3	NM_020965.2	623	ttgcggtaattaccatgaattctca	209322	-	see also 8053 line	-	-
16250	MPP1	NM_002436.2	219	ctgtatcgcatccattgaataact	209375	-	see also 1568 line	-	-

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16251	MPP3	NM_001932.2	487	gagaagcttcgcattatgaag	209414	-	kinase_related, signal transduction	guanylate kinase	-
16252	PMVK	NM_006556.2	848	tggagAACgtatagaattatc	209432	-	kinase_related	phosphomevalonate kinase	-
16253	CKMT1	NM_020990.2	412	tggagcgtatagatcagtgatcc	209441	-	see also 8062 line	-	-
16254	CKMT2	NM_001825.1	654	aggagcagttcgcagcagcattacg	209454	-	see also 1180 line	-	-
16255	CEPT1	NM_006090.2	703	tgtgcgcacactggcacaacgtatg	209489	-	see also 4228 line	-	-
16256	PIGF	NM_002643.2	272	ctgcttcaactctagtactatat	209518	-	see also 1718 line	-	-
16257	CHPT1	NM_020244.1	686	tgcgcctcattggcagacttatg	209530	-	see also 7818 line	-	-
16258	DPAGT1	NM_001382.1	1185	cagctcgttcgactcttctatga	209578	-	see also 950 line	-	-
16259	PRPSAP1	NM_002766.1	874	aggcgcataaagatctatgta	209597	-	kinase_related	-	-
16260	PRPSAP2	NM_002767.2	217	tgtgtgacgccaccctgaattag	209604	-	kinase_related	-	-
16261	TPK1	NM_022445.2	228	tggaggtgcacaaccgttatatg	209626	-	kinase_related	-	-
16262	PGK1	NM_000291.2	115	gggaagcgggtcgttatgagagt	209647	-	kinase_related	HIF-1alpha/HIF-1beta-B complex	hemolytic anemia(溶血性貧血)
16263	PGK2	NM_138733.2	1121	tgggcccgttagagatattgaat	209680	-	kinase_related	phosphoglycerate kinase	-
16264	PYCS	NM_002860.2	299	tgtgtaccgcgaggggatgaatgt	209686	-	see also 1903 line	-	-
16265	MGC11134	NM_031472.2	527	tggcatgcgggtcccatgtgaaa	209745	-	-	-	-
16266	B3GALT1	NM_020981.2	1237	aggatcgcgaggtatcactgt	209781	-	-	-	-
16267	B3GALT2	NM_003783.2	1938	aggatcgcacccgtaaacata	209829	-	see also 2587 line	-	-
16268	B3GALT4	NM_003782.2	974	gggcagcaccgcgtatcagagag	209834	-	-	-	-
16269	B3GALT5	NM_006057.1	1106	gtggcaggtcaggtgtacaatgt	209853	-	-	-	-
16270	B3GNT1	NM_006577.3	1070	ttagacctcctcgggataaagc	209886	-	see also 4609 line	-	-
16271	B4GALT1	NM_001497.2	174	tggcgtcaccctcgtttactacc	209905	-	transferase, transferring glycosyl groups	-	-
16272	B4GALT2	NM_003780.2	574	gcgtacgcgcgtctatgtatca	209936	-	see also 2585 line	-	-
16273	B4GALT3	NM_003779.2	909	atgttgcggttgctatgacaag	209953	-	see also 2584 line	-	-
16274	B4GALT4	NM_003778.2	977	gggtacaggttacgtttacagtag	209980	-	transferase, transferring glycosyl groups	-	-
16275	ABO	NM_020469.1	285	ctggagaggacacattcaacatcg	209993	-	transferase, transferring glycosyl groups	-	-
16276	B4GALT7	NM_007255.1	715	ccgcgagagcagcagagttctacc	209998	-	xylosyl/protein 4-beta-galactosyltransferase	-	-
16277	C1GALT1	NM_020156.1	393	tggcccgagcgttgttaacaaagt	210011	-	-	-	-
16278	A4GALT	NM_017436.3	791	ctggacacggacttcattgtct	210035	-	-	-	-
16279	B3GNT3	NM_014256.2	901	gagcgtaccaccaccttatgtgg	210049	-	transferase, transferring glycosyl groups	-	-

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16280	B3GNT4	NM_030765.1	759	acgtcccaacgtgttagagttc	210059	-	-	-
16281	B3GNT5	NM_032047.2	762	atgacgcagcttcggaattaga	210083	-	-	-
16282	B3GNT7	NM_145236.1	425	ggagcgtgaccaccactaactgc	210112	-	-	-
16283	B4GALT5	NM_004776.2	834	gtgatcgcaactattattggtgt	210138	-	transferase, transferring glycosyl groups	-
16284	IMAGE:490 7098	NM_138706.1	773	gcacacagctggagcaagtaattc	210144	-	-	-
16285	MGC39558	NM_152490.1	1200	atgttgtcgacacttatctgtaatt	210169	-	-	-
16286	MGC4655	NM_033309.1	1109	gcgggctgacgaagtactacatcc	210196	-	-	-
16287	DSGR5	NM_016430.2	637	ttgcagcccaaaagaactttacacc	210207	-	see also 6856 line	-
16288	PIGA	NM_002641.1	1465	acgggggtgcctggactaataact	210251	-	see also 1714 line	-
16289	PIGC	NM_153747.1	1030	tggggaggcctactgtccattagt	210272	-	enzyme	-
16290	PIGQ	NM_004204.2	863	tggagcactcacgcctaattcttc	210279	-	see also 2813 line	-
16291	C2GNT3	NM_016591.1	1077	ctgttcgggtatctatgaacagg	210294	-	-	-
16292	GCNT2	NM_001491.2	1634	ctggctctatgccaaatgcatacc	210351	-	-	-
16293	GCNT3	NM_004751.1	1512	cagcgggctatctgcgtttatgg	210423	-	-	lung squamous cell carcinoma(肺扁平上皮癌)
16294	FLJ20277	NM_017739.1	436	ctggagcgtaggagggtattcaag	210428	-	see also 7128 line	-
16295	MGAT1	NM_002406.2	1641	gggaggtacgggtgcagtaaacg	210446	-	transferase, transferring glycosyl groups	-
16296	MGAT4A	NM_012214.1	139	aggctccgcgaatggacatgtagc	210451	-	see also 5202 line	-
16297	MGAT4B	NM_014275.2	138	aggcagcgttgagacgtttacc	210490	-	see also 5576 line	-
16298	GCNT1	NM_001490.3	1252	aagcgtatgaggtcgttaattgg	210552	-	transferase, transferring glycosyl groups	-
16299	B3GNT6	NM_006876.1	675	atgcctgtgggcaccaaattgtctcc	210565	-	-	-
16300	MGAT2	NM_002408.2	954	ctggctgcaccggagatcaatcagc	210578	-	see also 1557 line	-
16301	MGAT5	NM_002410.2	3941	tggactgaaccccgcaatttaatt	210634	-	Ets1/ Ets2	-
16302	alpha4GnT	NM_016161.1	734	aggcttctcgttactactagttaatt	210667	-	-	-
16303	XYLT1	NM_022166.1	2333	ggagagcgtattccgcaactttgg	210691	-	-	-
16304	XYLT2	NM_022167.1	2351	ttgacottcaaccggcaaaactacc	210711	-	see also 8320 line	-
16305	FUT1	NM_000148.1	766	tgggactatctgcagggttatgc	210719	-	transferase, transferring glycosyl groups	Bombay phenotype(ボンベイ型表現型)
16306	FUT2	NM_000511.1	191	aggacactgttcaactatcaactcc	210725	-	transferase, transferring glycosyl groups	-
16307	FUT8	NM_004480.3	2085	acggcgaagtaccaccacatatacc	210773	-	see also 3030 line	-
16308	FUT10	NM_032604.3	514	agggaagcactcacgcattcttaatt	210788	-	-	-
16309	FUT11	NM_173540.1	977	agggaactggatgcggacaataca	210828	-	-	-
16310	FUT4	NM_002033.1	1347	gggcagccgggtgcccgaaatttgg	210841	-	transferase, transferring glycosyl groups	leukemia(白血病)

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16311	FUT7	NM_004479.1	554	gcgcgactcggacatctttgtgc	210846	-	-	transferase, transferring glycosyl groups	-
16312	FUT9	NM_006581.2	1319	atgtttggcttcgcatcatgtga	210887	-	see also 4610 line	-	-
16313	UGT1A10	NM_019075.1	1096	gcgaacaacacacatacttgtaa	329679	-	-	human glucuronosyltransf erases	-
16314	UGT2A1	NM_006798.1	525	ttgtggcgatagtagotgtaa	210903	-	-	-	-
16315	UGT2B10	NM_001075.2	355	gtgggcaattaatgacataatta	210933	-	-	human glucuronosyltransf erases	-
16316	UGT2B11	NM_001073.1	209	atgatgcacacactcttaaat	210934	-	-	human glucuronosyltransf erases	-
16317	UGT2B15	NM_001076.1	529	ctgtacagcttcgattcttgt	210943	-	-	human glucuronosyltransf erases	-
16318	UGT2B17	NM_001077.1	1078	aagaagccaaatactttagcttc	210947	-	-	human glucuronosyltransf erases	-
16319	UGT2B28	NM_053039.1	82	tggtgtggaccgggtgaatacagc	210948	-	-	human glucuronosyltransf erases	-
16320	UGT2B4	NM_021139.1	238	cagcccatctactottaatttg	210950	-	-	human glucuronosyltransf erases	-
16321	UGT2B7	NM_001074.1	346	aagtacaggaataatcatgtaata	210962	-	-	human glucuronosyltransf erases	-
16322	GALNT2	NM_004481.2	569	ttgagaaagtcgagttctaga	210970	-	see also 3033 line	-	-
16323	GALNT3	NM_004482.2	592	tggtccacgttgcttagaactgt	211020	-	see also 3035 line	-	-
16324	GALNT5	NM_014588.1	2089	gtggcctgtccagtaatacgaagt	211101	-	see also 5755 line	-	-
16325	GALNT7	NM_017423.1	1011	gtggcgttatagatgataaa	211179	-	see also 6998 line	-	-
16326	GALNT8	NM_017417.1	370	atgaagtacgcccctcttctaag	211213	-	-	-	-
16327	GALNT9	NM_021808.2	538	cggagatgagggtctacacaac	211246	-	see also 8175 line	-	-
16328	GALGT	NM_001478.2	1283	aagaacctctccgthtatgctg	211255	-	-	transferase, transferring glycosyl groups	-
16329	DDOST	NM_005216.3	1033	ctgaactagtggagtagatgcatc	211278	-	-	dolichyl- diphospho- oligosaccharide- protein	-
16330	RPN2	NM_002951.2	1349	gtgacaaccggatattgcaaat	211303	-	see also 1993 line	-	-
16331	ALG5	NM_013338.3	622	tggatctcgagctcatatgaaa	211336	-	see also 5404 line	-	-

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16332	ALG6	NM_013339.2	1142	ttgccacgtcacatccaaattaat	211386	-	-	-	congenital disorder of glycosylation(先天性糖鎖形成不良)
16333	ITM1	NM_152713.2	1575	ggagatggcagtagatcatatt	211443	-	see also 9930 line	-	
16334	SIMP	NM_178862.1	299	acgagttcgaccctgggttaac	211461	-	-	-	
16335	PYGB	NM_002862.3	1990	cggcgacgtcgtaaatcatgacc	211568	-	-	transferase, transferring glycosyl groups	colorectal cancer(大腸癌), colorectal cancers(結腸直腸癌), gastric cancer(胃癌)
16336	PYGL	NM_002863.1	788	ctgctcgggcacccaatgacttt	211582	-	see also 1905 line	-	
16337	PYGM	NM_005609.1	2522	aagcgattcacgaataaacg	211646	-	see also 3897 line	-	
16338	MTAP	NM_002451.2	144	cgccgtgaagattggaataatt	211661	-	-	transferase, transferring glycosyl groups	-
16339	NP	NM_000270.1	600	atgcctacgaccggactatgagg	211694	-	-	transferase, transferring glycosyl groups	-
16340	GYG	NM_004130.2	369	ctggctctagcaaatattgatga	211702	-	see also 2787 line	-	immunodeficiency(免疫不全症)
16341	GYG2	NM_003918.1	1296	cggcgctgcgtgtgcaaatca	211744	-	-	glycogenin glycosyltransferase	-
16342	UGCGL1	NM_020120.1	310	atgacggtagcggatttctctac	211765	-	-	-	-
16343	GYS1	NM_002103.3	1282	atgccagcgggacccaacaattt	211901	-	-	transferase, transferring glycosyl groups	diabetes mellitus(糖尿病), diabetes(糖尿病)
16344	UGCG	NM_003358.1	1355	cgcgaaatcatgacaaatataca	211956	-	see also 2263 line	-	
16345	POMT2	NM_013382.3	1895	tggcaatggcctatcaactatca	211986	-	see also 5415 line	-	
16346	SDF2	NM_006923.2	336	tggcgaagacctccatagtcacc	211992	-	-	dolichyl-phosphate-mannose-protein mannosyltransferase	-
16347	DPM1	NM_003859.1	672	tggcgaaggtccaataatcattg	212013	-	see also 2623 line	-	
16348	AD-017	NM_018446.1	246	taggcctcaacctatagacttt	212018	-	see also 7481 line	-	
16349	FLJ21934	NM_024743.1	416	gtgcctatgacaggactaacaga	212073	-	-	-	-
16350	FLJ34658	NM_152404.2	507	ttaggactcaatgtagttattg	212083	-	-	-	-
16351	FLJ35155	NM_152531.3	1190	acgtcttagaggcctatttcagg	212099	-	-	-	-
16352	HGNT-IV-					-	-	-	-
16353	H	NM_013244.2	872	aagaaagcggtatcttacaattg	212114	-	see also 5360 line	-	
16354	LARGE	NM_004737.2	1784	ctgagatgacggccaactcttt	212167	-	see also 3263 line	-	
16354	LOC16712	NM_174914.2	233	aagatcacggctaatgctcacc	212175	-	-	-	-
16355	LOC83468	NM_031302.2	669	cgaatactctgactcgaataacg	212193	-	-	-	-
16356	UGCGL2	NM_020121.2	1682	ctggagagcttcaactatattg	212267	-	-	-	-
16357	ADPRTL1	NM_006437.2	3126	cagcaaatgctcagctttaagg	212437	-	-	transferase, transferring glycosyl groups	-

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16358	ADPRTL3	NM_005485.2	687	gggcaagtagcacacttatgaag	212481	-	-	transferase, transferring glycosyl groups	-
16359	ART1	NM_004314.1	962	tgggcttgccatctggataatt	212493	-	-	transferase, transferring glycosyl groups	-
16360	ART3	NM_001179.2	152	atgctgtggcaaccatgattct	212495	-	-	transferase, transferring glycosyl groups	-
16361	TNKS2	NM_025235.2	1824	aagagggtatctcattaggtaat	212555	-	-	transferase, transferring glycosyl groups	-
16362	ART5	NM_053017.2	1168	gggaacgggtgaccttcattga	212621	-	-	transferase, transferring glycosyl groups	-
16363	DO	NM_021071.1	914	ctgggaacctgagcacataaac	212654	-	-	transferase, transferring glycosyl groups	-
16364	PRTFDC1	NM_020200.5	62	cgggcgaggcgctggtattgg	212658	-	see also 8990 line	-	-
16365	QTRT1	NM_031209.1	761	aggacaagccccatattgatg	212697	-	-	-	-
16366	QTRTD1	NM_024638.2	239	gagcttaccaggtagttaag:	212698	-	-	-	-
16367	UPP1	NM_003364.2	858	ggctccaacgctcactcatcctc	212736	-	-	-	-
16368	UMPS	NM_000373.1	413	tggaaactaaggtctgttagaag	212747	-	see also 299 line	-	-
16369	SIAT4A	NM_003033.2	1328	gggagaagagagcccaataacttg	212777	-	-	-	-
16370	SIAT4B	NM_006927.2	1401	cagccacttgacggtaacattt	212780	-	-	-	-
16371	SIAT4C	NM_006278.1	1084	cggggtcaggccaataatgtctcc	212800	-	see also 4368 line	-	-
16372	SIAT7C	NM_152996.1	610	ttgggggaacctttccgcaataga	212818	-	see also 9971 line	-	-
16373	SIAT7D	NM_014403.3	284	gggtcggctcgtgctcatcctcc	212832	-	-	-	-
16374	SIAT1	NM_003032.2	1115	tgtaccagaatccggattataa	212862	-	-	-	-
16375	SIAT8A	NM_003034.2	932	tggctgtggccgtcaaatagatg	212883	-	-	transferase, transferring glycosyl groups	melanoma(メラノーマ)
16376	SIAT9	NM_003896.2	514	caggatagctggtgacttactcc	212902	-	see also 2653 line	-	-
16377	SIAT7A	NM_018414.2	1334	tgggcaatcgggggttcaagaac	212929	-	-	-	-
16378	SIAT10	NM_006100.2	690	ttgtatggtagatgaattttga	212970	-	-	molecular_function unknown	-
16379	SIAT7E	NM_030965.1	1093	ctgggacagagacattcaatttc	213003	-	-	transferase, transferring glycosyl groups	-
16380	SIAT8B	NM_006011.2	162	cagcttaccatagacaacttaata	213008	-	see also 4187 line	-	-
16381	SIAT8C	NM_015879.1	2192	cggggattccgggtcacaatttgc	213026	-	see also 6552 line	-	-
16382	SIAT8D	NM_005668.3	333	tggacgatctgcacaataagtct	213060	-	see also 3938 line	-	-
16383	SIAT8E	NM_013305.2	630	atggcaggaactacattagagg	213098	-	-	-	-
16384	ST6GallI	NM_032528.1	1080	caggcgaactcctcaactcttc	213126	-	-	-	-

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16385	ST6GALN AC6	NM_013443.3	507	gagtgtaacaatcgcatgaatga	213146	-	-	-	-
16386	STHM	NM_006456.1	464	ggcacacccctcaaaagtgtatc	213158	-	-	transferase, transferring glycosyl groups	-
16387	ALG12	NM_024105.2	1151	gagctacgcttcacatcatcgtc	213182	-	-	-	-
16388	ALG3	NM_005787.3	308	cagctggtttcgtgtacatcttt	213190	-	-	see also 4045 line	-
16389	ALG8	NM_024079.2	407	ctgtccggtgagtgctgaatgc	213205	-	-	see also 8582 line	-
16390	C1GALT2	NM_152692.2	685	acgcccactacgtttgtcatca	213263	-	-	-	-
16391	DPM2	NM_003863.2	145	cagcatgttoaccacaagtattt	213274	-	-	-	-
16392	EXT1	NM_000127.1	2708	gtggaccaatggccaatttga	213342	-	-	see also 100 line	-
16393	EXT2	NM_000401.1	1022	aggtgggacgaggtacgaatca	213364	-	-	see also 321 line	-
16394	EXTL1	NM_004455.1	1141	ggggcgatggccttaaggatttc	213408	-	-	transferase, transferring glycosyl groups	-
16395	EXTL2	NM_001439.1	330	gggattcgagtcgttcgattatc	213430	-	-	transferase, transferring glycosyl groups	-
16396	EXTL3	NM_001440.1	1320	ctgccttaactgatactagtgg	213472	-	-	see also 1009 line	-
16397	HAS1	NM_001523.1	952	gcgctctctaggcctatatagg	213501	-	-	transferase, transferring glycosyl groups	-
16398	HAS2	NM_005328.1	796	tggcatcgctgcctatcaagaag	213519	-	-	see also 3713 line	-
16399	MFNG	NM_002405.2	1053	gaggagacccctccagatttcg	213592	-	-	transferase, transferring glycosyl groups	-
16400	SMP3	NM_025163.2	965	tggccacggacagctggtatttc	213595	-	-	-	-
16401	BAT8	NM_006709.2	134	ggggacacccctcgtagtgaaga	213597	-	-	-	-
16402	SET7	NM_030648.1	478	caggagattacacttacgaaga	213631	-	-	see also 8921 line	-
16403	C20orf36	NM_018257.1	602	cagtagatcgtgtactactgtgg	213667	-	-	-	-
16404	LOC11529	NM_052937.1	946	gagaattaacacttaactgtttg	213707	-	-	see also 9460 line	-
16405	PCMT1	NM_005389.1	572	caggcgcctaataagatcagtaaa	213727	-	-	protein-L- isoaspartate (D- aspartate) O- methyltransferase	-
16406	BHMT	NM_001713.1	281	caggggcaactatgtcttagaga	213744	-	-	homocysteine S- methyltransferase	-
16407	BHMT2	NM_017614.3	362	ctgccagacatcaataatacaat	213766	-	-	-	-
16408	MTR	NM_000254.1	717	gggctctgggtccgactaataag	213779	-	-	homocystinuria(ホモシスチン尿症)、 Methylcobalamin deficiency(メチルコバラミン欠 損症)	-
16409	METTL1	NM_005371.3	961	ggggctgtgtgtataccataacc	213858	-	-	-	-
16410	HSA9761	NM_014473.1	745	tgggtagtctctagtaggaataac	213881	-	-	see also 5699 line	-
16411	TFB1M	NM_016020.1	648	gcgtagtcgcctctctgtattg	213916	-	-	see also 6621 line	-



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16412	FLJ10140	NM_018006.2	627	ggaggattacgaagagatttg	213941	-	-	-
16413	ICMT	NM_012405.2	679	ttgggttcggcatcctcttaag	213966	-	-	-
16414	PEMT	NM_007169.2	514	gggttcgctggaaccttcttagg	213971	-	-	-
16415	PNMT	NM_002686.2	974	gggacctcgcgacctatataatg	213986	-	-	phenylethanolamin e N- methyltransferase
16416	COQ3	NM_017421.2	105	ctgcgctcccttaattctctog	213989	-	see also 6997 line	-
16417	CGI-30	NM_015958.1	787	cagttaccgagggagacacttgt	214045	-	-	-
16418	INMT	NM_006774.3	181	agggagacgctgattgacatg	214054	-	-	methytransferase
16419	TPMT	NM_000367.1	609	ctgtgtgtttctttcttatgctcc	214065	-	-	thiopurine S-methyltransferase deficiency(チオ プリン S-メチルトランスフェラーゼ欠損症)、 leukemia(白血病)
16420	NNMT	NM_006169.1	823	gaggtgatctcgcaaaagtatttc	214077	-	-	-
16421	AD-003	NM_014064.1	397	aggtgagataggtcgacataacg	214081	-	-	nicotinamide N- methyltransferase
16422	C2orf8	NM_025264.2	1197	ttggcggaaacattgtattgttg	214115	-	-	-
16423	CGI-01	NM_015935.2	1499	acggcctgtgtacgatgtcataa	214141	-	-	molecular_function unknown
16424	CYT19	NM_020682.2	603	aagcatgttgaggagattatatt	214166	-	-	-
16425	FLJ10640	NM_019023.1	1703	tgggcgagcgcgtttctactacc	214200	-	see also 7664 line	-
16426	FLJ20628	NM_017910.2	70	gggctcggaacccaattcattcc	214205	-	-	-
16427	FLJ23841	NM_144589.2	774	ggtgtcgaaacccaataacgaac	214260	-	-	-
16428	HNMT	NM_006895.1	875	tggacaacctagggttaagtat	214277	-	see also 4826 line	-
16429	HRMT1L1	NM_001535.1	394	gggtacattcgggcaaacattgt	214286	-	signal_transduction	signal transducer
16430	HRMT1L2	NM_001536.2	226	cgcgaactccatgtttctaatacc	214303	-	signal_transduction	S- adenosylmethionin e-dependent methyltransferase
16431	HRMT1L3	NM_019854.2	696	ttgtacgtgtgtagcgattgaaga	214318	-	-	S- adenosylmethionin e-dependent methyltransferase
16432	LCMT1	NM_016015.2	752	aagagatatgcggttatggagc	214341	-	-	-
16433	MGC17301	NM_152637.1	692	ggcccaacctggaaacacattgg	214361	-	-	-
16434	MGC2408	NM_032331.2	135	cggattctgccccctacgattgg	214362	-	-	-
16435	MGC24132	NM_152396.1	788	to-gtactacggactgtatgac	214391	-	-	-
16436	MGC50559	NM_173802.2	743	atggctattacacataaattgtga	214410	-	-	-
16437	NCOA6IP	NM_024831.5	498	cgcgctggcggaagtgttctct	214422	-	-	-
16438	SRM	NM_003132.1	576	atgccttcgacgtgatcatcact	214505	-	-	spermidine
16439	WBSCR22	NM_017528.2	677	gggcttcgacacttataccaga	214518	-	-	S- adenosylmethionin e-dependent methyltransferase
16440	GART	NM_000819.3	1349	toggatttcgtgccatagcttcc	214559	-	-	-

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16441	MtFMT	NM_139242.2	726	gcgacttaagccctcaagatttc	214621	-	-	-
16442	FTHFD	NM_012190.2	1393	ggcgagtgacgattgactacg	214656	-	-	-
16443	SHMT1	NM_004169.3	274	cagtgatgtgaggtttacaaca	214673	-	-	-
16444	SHMT2	NM_005412.3	931	ccgggagatcccttacacatttg	214698	-	glycine hydroxymethyltransferase	-
16445	AMT	NM_000481.1	1326	ttgtgcccaaaactatatacc	214720	-	transaminase	glycine encephalopathy(グリシン脳症)
16446	DMGDH	NM_013391.2	1480	cagcgactgtgtctacaacc	214772	-	see also 5421 line	-
16447	PDPR	NM_017990.3	3087	tcgcagctccgaattgagaagt	214809	-	see also 7190 line	-
16448	SARDH	NM_007101.2	1774	ggcgaccgggagtggtttcatcc	214831	-	-	-
16449	TYMS	NM_001071.1	623	acgacagaagaatcatcatgtgc	214846	-	thymidylate synthase	-
16450	FLJ20257	NM_019606.3	2046	ttgtttctgcacgggtatattat	214864	-	-	-
16451	FTSJ1	NM_012280.2	667	gtgacgggctctctgataacc	214874	-	-	-
16452	FTSJ2	NM_013393.1	244	ccggcctctgggttgactgt	214883	-	-	-
16453	LOC57019	NM_020313.1	719	tcgaagcctgcagtcacttttagc	214900	-	-	-
16454	GATM	NM_001482.1	544	gagtcacgggtttatacaagtgc	214941	-	see also 1021 line	-
16455	NAT1	NM_000662.3	621	tggtatctagaccacaaatcagaac	214971	-	arylamine N-acetyltransferase	bladder cancer(膀胱癌)、lung cancer(肺癌)
16456	NAT2	NM_000015.1	684	acgttgaacctcgacaattga	214986	-	arylamine N-acetyltransferase	bladder cancer(膀胱癌)、Parkinson disease(パーキンソン病)
16457	SAT	NM_002970.1	563	atgaaccatcatcaacttctat	215007	-	diamine N-acetyltransferase	-
16458	NAGS	NM_153006.1	897	gcgcgacagcagtcataaggctcc	215017	-	kinase_related	-
16459	OML2	NM_016347.1	278	ctggacgcggtatgtagacatatg	215029	-	-	-
16460	CSRP2BP	NM_020536.2	2180	ttgttgattgaagggtattatgg	215051	-	see also 7892 line	-
16461	DKFZP564					-	-	-
16461	C103	NM_015654.3	477	acgctaggtctgaocaaagtgtga	215078	-	-	-
16462	ELP3	NM_018091.3	52	atgctgactatagagatgttat	215084	-	see also 7252 line	-
16463	FLJ13848	NM_024771.1	713	gggaggttgctcctatgagatc	215144	-	-	-
16464	KLP1	NM_020378.2	417	ctggccctggcacaatgcagg	215157	-	transcription_regulator	-
16465	MAK3P	NM_025146.1	484	agggtggatcattcacagaatca	215164	-	or	-
16466	NAT5	NM_016100.2	361	ttggtttggctgtctaaactatg	215183	-	see also 8871 line	-
16467	SAT2	NM_133491.2	432	atggatatactatttcatctac	215203	-	see also 6660 line	-
16468	GTF3C4	NM_012204.1	1407	gtgtagttgcagcttagtagtg	215233	-	transcription_regulator	-
16469	ACAT1	NM_000019.2	401	ttgggtgcagcttaccattttc	215258	-	acetyl-CoA C-acyltransferase	alpha-methylacetoaceticaciduria( $\alpha$ メチルアセトニアセト酢酸尿症)
16470	HADHA	NM_000182.3	1988	aagggtctcttagtgcgtaaatc	215339	-	see also 155 line	-
16471	GAT	NM_014291.2	1203	gtgcatagcagggaagacattga	215362	-	transaminase	-
16472	GAT	NM_020549.2	1272	caggacggtctcgtgaaagact	215367	-	-	-
16473	CRAT	NM_000755.2	692	cagggtgcagctccgatttctgc	215382	-	-	Alzheimer disease(アルツハイマー病)

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16474	GNPAT	NM_014236.1	1183	gagtcggagctcataacttgg	215427	-	-	glycerone-phosphate O-acyltransferase	chondrodysplasia(軟骨異形成症)
16475	NMT1	NM_021079.3	1025	ctggcctgcgacacatggaaca	215454	-	see also 8079 line	-	-
16476	NMT2	NM_004808.1	560	aaggagttatcacacgttgttaaa	215471	-	see also 3342 line	-	-
16477	AGPAT1	NM_006411.2	495	aggacgcaacgtcgagaacatga	215505	-	-	-	-
16478	AGPAT4	NM_020133.1	1205	gtggagttcgtgagtgatggtgg	215529	-	-	-	-
16479	LPAAT-e	NM_018361.1	1044	ctgcctgtgggtactattaaag	215556	-	see also 7414 line	-	-
16480	CPT1A	NM_001876.1	2050	ctgcctttacgtgtgtctaaat	215598	-	-	Peroxisome proliferator activated receptor alpha	hypoglycemia(低血糖症)
16481	CPT1B	NM_004377.2	1705	cagacgacgtggagttgtactgc	215621	-	-	-	-
16482	CPT2	NM_000098.1	1980	ctgtagcaactcgcgaattcaagc	215651	-	-	carnitine O-palmitoyltransferase	hypoglycemia(低血糖症)、myopathy(ミオパシー)、Alzheimer disease(アルツハイマー病)、carnitine palmitoyltransferase II (CPT II) deficiency(カルニチン・パルミトイルトランスフェ
16483	CROT	NM_021151.2	1372	ttgcgagttatgccctttacatct	215715	-	-	carnitine O-octanoyltransferase	-
16484	SOAT1	NM_003101.3	2219	gtgcctcgggtactaaattcagc	215761	-	-	sterol O-acyltransferase	-
16485	SOAT2	NM_003578.2	255	gcggagggctatacaactctacc	215789	-	-	sterol O-acyltransferase	atherosclerosis(粥状硬化症)
16486	LCAT	NM_000229.1	295	gggtagactcgtcgatcgataac	215804	-	-	phosphatidylcholine-sterol O-acyltransferase	atherosclerosis(粥状硬化症)、fish-eye disease(魚眼病)、Norum disease (lecithin-cholesterol acyltransferase deficiency)(Norum
16487	KIAA1560	NM_020918.2	735	ctgtctcaccggcgaatgatcaga	215830	-	see also 8021 line	-	-
16488	ACAA1	NM_001607.2	1104	gtggacatcttcgagatcaatga	215903	-	-	acetyl-CoA C-acyltransferase	pseudo-Zellweger syndrome(偽性 Zellweger 症候群)
16489	ACAA2	NM_006111.1	55	ctgtcccgagggtgtgtttgtagt	215907	-	-	acetyl-CoA C-acyltransferase	-
16490	HADHB	NM_000183.1	626	cagcgcactgtctttaactctaa	215925	-	-	enoyl-CoA hydratase	trifunctional protein deficiency(三官能性タンパク質欠損症)
16491	SPTLC2	NM_004863.2	1007	aggagcaaccattagaattctca	216004	-	see also 3378 line	-	-
16492	DLST	NM_001933.3	939	gtgattgacgacacacaacaaaga	216031	-	-	dihydrolipoamide S-	-
16493	ALAS1	NM_000688.4	1381	cagccgagtgccaaagtacatct	216054	-	-	transaminase	-
16494	ALAS2	NM_000032.1	1723	ctgtcgcgcgtctgtacacttgg	216076	-	see also 4 line	-	-
16495	ATE1	NM_007041.1	997	caggatccaccagatgaatgtgg	216101	-	see also 4930 line	-	-
16496	AUP1	NM_012103.2	1303	gtgtagacttgactatcactaat	216131	-	see also 5132 line	-	-
16497	BAAT	NM_001701.1	1271	ctgtagaacctccctattctcc	216177	-	-	-	-
16498	CPT1C	NM_152359.1	1542	atgatcgtgtgttgacaaatcc	216190	-	-	-	-
16499	DGAT2	NM_032564.2	629	gcgctactcttcggagactacttc	216207	-	see also 9248 line	-	-
16500	DGAT2L1	NM_058165.1	953	aggagttacatcagacctatgtg	216239	-	-	-	-

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16501	DKFZp586	NM_178819.2	1740	gggactcatgggtgtgattcaga	216268	-	see also 10210 line	-
16502	FLJ32370	NM_152417.1	772	tcgagaagccctaattagtatg	216287	-	see also 9860 line	-
16503	FLJ37965	NM_182551.1	607	ttgcctgatcgatatagtacac	216301	-	-	-
16504	GGTLA1	NM_004121.1	1204	gggggtgccattctcagctttatc	216311	-	gamma-glutamyl transferase	-
16505	GLYAT	NM_005838.1	284	atgacctgatcactatacaaat	216319	-	-	-
16506	KIAA0205	NM_014873.1	377	cagtaagcgggtcttggtatag	216335	-	see also 6069 line	-
16507	LRAT	NM_004744.1	713	ctgtacgggtcttggtatataca	216374	-	-	retinal dystrophy(網膜ジストロフィー)
16508	MGAT2	NM_025098.2	717	tggctcttggttaagctatatac	216387	-	-	-
16509	MGAT3	NM_178176.2	631	cggctctatcggaactacatcatg	216403	-	-	-
16510	MGC11324	NM_032717.3	264	gtgggcccacaatacgaattgaaa	216413	-	-	-
16511	QPCT	NM_012413.2	357	gggtacccgggtcttctcaaat	216450	-	glutamyl-peptide cyclotransferase	-
16512	TAZ	NM_000116.2	937	ctgtggcatgctcgaatgaatga	216476	-	-	methylglutaconic aciduria(メチルグルタコン酸尿症)、cardiomyopathy(アルコール性心筋症)、endocardial fibroelastosis(心内膜弾性線維症)
16513	GGTL3	NM_052830.3	632	atgagagccacctaattgatttc	216485	-	-	-
16514	HMGCS1	NM_002130.3	802	gtgattagacccgtctgtattct	216520	-	see also 1367 line	-
16515	HMGCS2	NM_005518.1	985	ctggctcgcctgatttcaatga	216567	-	see also 3849 line	-
16516	CS	NM_004077.2	922	aggctatactgataatcagttca	216588	-	citrate (Si)- synthase	-
16517	CLYBL	NM_138280.2	818	agggtattcaccctaaacaaatt	216609	-	see also 9591 line	-
16518	GSTA4	NM_001512.2	722	aagaaagccctccctgatgaaat	216622	-	glutathione transferase	-
16519	GSTM1	NM_000561.2	385	ctgggcatgatctcgtacaatcc	216626	-	-	bladder cancer(膀胱癌)、breast cancer(乳癌)、lung cancer(肺癌)、head and neck cancer(頭頸部癌)、non-small-cell lung cancer(非小細胞肺癌)、head and neck squamous cell carcinoma(頭頸部扁平上皮細胞癌)
16520	GSTM2	NM_000848.2	513	gtggatttcacgtcttattgatgt	216629	-	glutathione transferase	-
16521	GSTM3	NM_000849.3	207	gagttcacggatacctcttatga	216632	-	glutathione transferase	-
16522	GSTM4	NM_000850.3	736	gggaagagcccatgttttttgg	216643	-	-	-
16523	GSTO1	NM_004832.1	71	agggctcgatccgcatctacagc	216645	-	-	-
16524	GSTO2	NM_183239.1	690	agggctcgatccgcatctacagc	216658	-	see also 10291 line	-
16525	GSTP1	NM_000852.2	144	tggcaggaggagctcactcaaacg	216680	-	Smad3/Sp-1 heterodimer	breast cancer(乳癌)、Parkinson disease(パーキンソン病)
16526	GSTT1	NM_000853.1	88	ctgcgcacgttggaatctgattaa	216694	-	glutathione transferase	breast cancer(乳癌)、head and neck cancer(頭頸部癌)、head and neck squamous cell carcinoma(頭頸部扁平上皮細胞癌)
16527	GSTT2	NM_000854.2	262	aagctcgcccatcctgatttacc	216692	-	glutathione transferase	-

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16528	GSTZ1	NM_001513.2	761	gggccgaagacgccaacttgt	216702	-	-	protein disulfide oxidoreductase	-
16529	LOC51064	NM_015917.1	410	atgcgcgtctgtgaagaatga	216712	-	-	-	-
16530	MGST1	NM_020300.3	135	ttgcatctatgaacaattatt	216718	-	-	-	-
16531	MGST2	NM_002413.3	515	atggcgcgtcacctatacttctgg	216739	-	-	glutathione transferase	-
16532	MGST3	NM_004528.2	152	gtggcccaactagccataaatgt	216747	-	-	signal transduction peroxidase	-
16533	CHM	NM_000390.1	1727	atgatttaccatccaagtttat	216793	-	-	see also 310 line	-
16534	RABGGTA	NM_004581.2	1418	cagttgcccccaacatacatctcg	216802	-	-	RAB-protein geranylgeranyltransferase	-
16535	PGGT1B	NM_005023.2	108	ttgccggagcgctattcttcact	216818	-	-	CAAX-protein geranylgeranyltransferase	-
16536	FNTA	NM_002027.1	358	aagctaaccggcgatgcttga	216860	-	-	see also 1315 line	-
16537	FNTB	NM_002028.2	849	aagccggcagatgcgatttgaag	216875	-	-	protein farnesyltransferase	-
16538	NS3TP1	NM_019048.1	2284	gtggacggctccaatcatgtcc	216947	-	-	-	-
16539	COX10	NM_001303.2	1422	gagctcggcgagactgtctct	216969	-	-	farnesyltransferase	-
16540	GGPS1	NM_004837.2	910	aagcaccacaggtgcagaatatct	216979	-	-	geranyltransferase	-
16541	FDP5	NM_002004.1	467	atgccattggaggcagaataaac	216991	-	-	zinc binding	-
16542	CL640	NM_015697.3	416	tggagcagctgtactattaatg	217008	-	-	-	-
16543	RABGGTB	NM_004582.2	106	cagatgcaccggagacatttatta	217035	-	-	prenyltransferase	retinal degeneration(網膜変性)
16544	SMS	NM_004595.2	838	gagactgctatcaggttctaata	217079	-	-	spermine synthase	-
16545	HMBS	NM_000190.2	1009	cggctcagatagcatatacaaga	217098	-	-	specific RNA polymerase II	porphyria(ポルフィリン症)、diabetes(糖尿病)
16546	DHPS	NM_001930.2	788	gtgttagtcccgcacttacaga	217106	-	-	transcription factor	-
16547	AGPS	NM_003659.1	1711	agggtagcgcagacttacgctgc	217166	-	-	see also 2478 line	-
16548	HS3ST2	NM_006043.1	629	aggtctctcgacgcatcttaaac	217186	-	-	-	-
16549	HS3ST3A1	NM_006042.1	855	cagcatcttcgggaagttcttcg	217204	-	-	-	-
16550	NDST2	NM_003635.2	3053	agggcggagaggtatccagatatgg	217245	-	-	see also 2453 line	-
16551	NDST3	NM_004784.1	1678	ggcgctacccctgacatgttc	217263	-	-	see also 3295 line	-
16552	CHST8	NM_022467.3	1769	ctgcctcagactacgatttgc	217299	-	-	see also 8390 line	-
16553	CHST9	NM_031422.1	523	ggggagatcaagcttaagtaag	217316	-	-	-	-
16554	TPST1	NM_003596.2	977	gtgctatagagacatgtataac	217364	-	-	see also 2414 line	-
16555	TPST2	NM_003595.2	382	ggggaccacacacgtggataacc	217379	-	-	protein-tyrosine sulfotransferase	-
16556	CHST3	NM_004273.2	1139	ctgtacgcccctgtgtaagaagg	217389	-	-	see also 2867 line	-
16557	CHST7	NM_019886.2	1380	atgccttcggcgctcaacatgact	217401	-	-	see also 7744 line	-
16558	SULT2A1	NM_003167.2	261	gggatgccaagtgagatccaatct	217409	-	-	alcohol sulfotransferase	-

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16559	CHST6	NM_021615.2	1289	ggcaacctgcgccttgatctgg	217425	-	-	-	Alzheimer disease(アルツハイマー病)
16560	CHST1	NM_003654.2	1327	tgttggaagaccgccgattaaac	217428	-	-	-	-
16561	CHST10	NM_004854.2	1268	cgggattaccggtgtataacaga	217449	-	see also 3374 line	-	-
16562	CHST2	NM_004267.2	1137	aagtaccgcacactagtcataaa	217459	-	-	-	-
16563	CHST5	NM_012126.1	624	gcgaactgatgcgctctcttt	217463	-	-	-	-
16564	GALNA4								
16564	S-6ST	NM_014863.1	1499	cggctatcccggtggaagattatc	217492	-	see also 6063 line	-	-
16565	GP3ST	NM_022134.1	969	ctggcgccgtacagcatttca	217512	-	-	-	-
16566	HS3ST5	NM_153612.1	428	ctgcttgccgttataatattct	217536	-	-	-	-
16567	NCAG1	NM_032160.1	5107	ctgattgatcccttagatatcc	217670	-	-	-	-
16568	NDST4	NM_022569.1	3037	gggaggtacacctcgttataat	217737	-	see also 8422 line	-	-
16569	SULT1B1	NM_014465.2	672	atgatttcttgctcgtgaatgc	217759	-	-	-	-
16570	SULT1C1	NM_001056.2	839	tagctcgaatgccaaagactgt	217776	-	see also 648 line	-	-
16571	SULT2B1	NM_004605.2	310	gggacgacacatctttatcctc	217788	-	-	-	-
16572	SULT4A1	NM_014351.2	471	gagactccaaggtcatctatg	217800	-	-	-	-
16573	UST	NM_005715.1	675	cggtaacccggtctttatccaac	217828	-	see also 3968 line	-	-
16574	MPST	NM_021126.3	730	ggagcccgagacggcattgaacc	217844	-	-	thiosulfate sulfurtransferase	-
16575	TST					-	-	structural constituent of cytoskeleton	-
16576	OXGT	NM_003312.4	429	tggccaccgcaccgctatcagtcg	217848	-	-	3-oxoacid CoA- transferase	ketoadidosis(ケトアシドーシス)
16577	AGXT	NM_000030.1	1096	ctgtaccgcgtggctatgactgg	217880	-	-	serine-pyruvate amino transferase	hyperoxaluria(過シュウ酸尿症)
16578	AGXT2	NM_031900.1	546	aggggcgactcaaacacacataga	217893	-	-	alanine-glyoxylate amino transferase	-
16579	AGXT2L1	NM_031279.2	597	ggattagcccatataagtttca	217927	-	-	amino transferase	-
16580	BCAT1	NM_005504.3	1396	ctgtacaaaaggcgagacaataca	217980	-	see also 3846 line	-	-
16581	BCAT2	NM_001190.1	1039	gtgcaccgaatcctgtacaaaaga	217990	-	-	branched-chain amino acid amino transferase	hyperleucine-isoleucinemia(高ロイシン血症)
16582	GOT1	NM_002079.1	219	tagcctaatacagagtatctgc	217995	-	see also 1346 line	-	-
16583	GOT2	NM_002080.1	199	ttggtgcctaccgggatgataat	218024	-	-	aspartate amino transferase	-
16584	TAT	NM_000353.1	397	ctggactcgggcaaatataatgg	218055	-	-	tyrosine amino transferase	keratosis palmoplantaris(点状掌蹼角化症)、 tyrosinosis(チロシン症)
16585	PSAT1	NM_021154.3	502	atgcctcctacgtgtattatgc	218089	-	-	phosphoserine transaminase	-
16586	OAT	NM_000274.1	1233	gtgtctacgacttcgagataatg	218119	-	-	ornithine-oxo-acid amino transferase	gyrate atrophy of choroid and retina(脳回転状網 膜脈絡膜萎縮)
16587	ABAT	NM_000663.2	675	gagctggagacggtgatgattaa	218137	-	see also 425 line	-	-
16588	CCBL1	NM_004059.2	378	ctgtacagagcccatgacaaatga	218157	-	see also 2735 line	-	-
16589	AADAT	NM_016228.3	452	ctgttgcttaccacaaatccaac	218167	-	-	-	-

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16590	GPT2	NM_133443.1	651	gagctagtagcggcatttctacg	218207	-	see also 9578 line	-
16591	MGC15875	NM_032921.1	977	aggctgcacttgggtatcaagg	218224	-	-	-
16592	MGC33309	NM_152413.1	264	aagaatcgactacagatttcaca	218242	-	-	-
16593	PHACS	NM_032592.1	544	tgggtgctcctccatgatctcc	218280	-	see also 9257 line	-
16594	SCLY	NM_016510.3	760	ggcgtagctcctctacacatcg	218308	-	-	-
16595	TALDO1	NM_006755.1	616	ttgttggcgcatctctgattgg	218326	-	transaldolase	-
16596	ACAT2	NM_005891.1	895	gggtgtggagccttccattatgg	218345	-	-	-
16597	ALG2	NM_033087.1	150	ggcggttagctggaagatctgg	218353	-	-	-
16598	C2orf155	NM_019095.3	603	atgattcattccgagagatgta	218396	-	see also 7703 line	-
16599	CARKL	NM_013276.1	628	cgggtaccatccacactatgtgg	218411	-	kinase related	-
16600	CAS1	NM_022900.3	2012	gaggttagacggttatgtgtt	218483	-	see also 8621 line	-
16601	CDSN	NM_001264.2	193	gtgaactccagcggcttcagtagc	218513	-	molecular_function unknown	-
16602	ChGn	NM_018371.3	2005	gtgaactttatccaaagtatct	218559	-	see also 7426 line	-
16603	CHST12	NM_018641.2	1305	ctggaggcagcagctgtataaac	218573	-	see also 7534 line	-
16604	D4ST-1	NM_130468.2	1193	cagcccccgaagcctgcattacc	218582	-	-	-
16605	DHDDS	NM_024887.1	643	ttgataagtcctctataccaac	218594	-	see also 8801 line	-
16606	FLJ12171	NM_024619.2	131	aggacaggtgtgtgaaagtga	218604	-	kinase_related	-
16607	FN3K	NM_022158.2	110	agggccaggtgtgtgaaagtga	218612	-	see also 8317 line	-
16608	GAL3ST-4	NM_024637.3	1435	gagagccctagcgaacattgt	218630	-	-	-
16609	GAL3ST2	NM_033036.1	363	cagcaccgtgaagccttctacc	218635	-	-	-
16610	GALGT2	NM_153446.1	245	cogttagggctcagattctgt	218640	-	-	-
16611	GALNACT	-	-	-	-	-	-	-
16611	-2	NM_018590.3	982	atgacttcgtagaaggatttat	218693	-	see also 7528 line	-
16612	GALNT12	NM_024642.2	290	gcgtgcgcctgcaccagattaac	218710	-	see also 8675 line	-
16613	GALNT14	NM_024572.1	461	aggacacatccagctgtattaaa	218744	-	-	-
16614	HS2ST1	NM_012262.2	714	aagatcagggtgcgtttgtaag	218774	-	see also 5242 line	-
16615	HS2ST2	NM_147174.2	421	cogccacttggctcgtaacatcc	218800	-	see also 9811 line	-
16616	HS2ST3	NM_153456.1	980	tggtagctgctataacttga	218824	-	see also 9995 line	-
16617	KIAA0290	NM_015122.1	2026	tgggaacggcccgacttcttacc	218845	-	see also 6256 line	-
16618	MAT2B	NM_013283.3	364	cagcccccattgtatagacattg	218849	-	-	-
16619	MMAB	NM_052845.1	432	cgggaggtcacttaagatatac	218877	-	-	-
16620	MTRR	NM_002454.1	193	tagtgaatccgataagtagaac	218883	-	-	homocystinuria(ホモシスチン尿症)
16621	PIGM	NM_145167.1	645	cogcggttaatcggagactctattg	218961	-	-	-
16622	PNR	NM_003967.1	479	gggtgcccgagcatacacttcg	219001	-	receptor_activity, gpcr,	-
16623	PTDSS1	NM_014754.1	916	tgaacctatgtctatggttga	219021	-	signal transduction	-
16624	TBDN100	NM_025085.2	481	ttggttcctagaggttgagaaa	219044	-	see also 5944 line	-
16625	TPT	NM_014317.2	1136	cagagctcgcacagtatgtactac	219145	-	see also 8853 line	-
16626	WBSCT17	NM_022479.1	256	gggtcattgaagggtatggtgg	219151	-	-	-
16627	AKAP28	NM_178813.3	117	aagcaatggatgaggaatacaaa	219169	-	-	-
16628	ALS2CR8	NM_024744.1	1034	caggtacttcgttaattccacc	219196	-	see also 8723 line	-
16629	C9orf12	NM_022755.3	505	gaggtggttcagctacactttaga	219243	-	kinase_related	-

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16630	CDKN1B	NM_004084.2	929	ctgaaccacgacattcttctact	219267	-	see also 2742 line.	-	-
16631	CNP	NM_032630.2	144	ggcgctgattggcacaattta	219279	-	-	-	-
16632	DKFZP434 N1923	NM_030974.2	1400	ggggaacttggagcctgtttcc	219288	-	kinase related	-	-
16633	DVL3	NM_004423.2	850	gagatgcaacccggcctaattgg	219295	-	kinase related, signal transduction	signal transducer	-
16634	FLJ12476	NM_022784.1	2062	ccggccttaactcgcataatag	219351	-	kinase related	-	-
16635	GKAP42	NM_025211.2	402	atggcctcagcagctacttagtc	219358	-	kinase related, signal transduction	-	-
16636	HINT3	NM_138571.3	642	gtggatcagcttggcttcttatt	219394	-	-	-	-
16637	IKBKAP	NM_003640.2	3701	cagtcgcaacaagaacgtttat	219479	-	see also 2458 line	-	-
16638	ITPK1	NM_014216.2	1038	aggcgagcagccgcgtcattgaca	219500	-	see also 5540 line	-	-
16639	LOC14746	NM_173505.1	987	atgaacttcggcagcaactaac	219513	-	-	-	-
16640	LOC55971	NM_018842.3	663	aagccgaacgcactcaaatatg	219531	-	-	-	-
16641	MADD	NM_003682.2	212	ctgtcctcgttacttgactatc	219557	-	see also 2499 line	-	-
16642	MAP3K7IP	NM_015093.2	1492	aagtcgagcaataggcaataact	219695	-	see also 6230 line	-	-
16643	NYD-SP25	NM_033516.2	383	ggagcgcctgtggggaactcaaga	219722	-	-	-	-
16644	PI01-PI3K	NM_014308.1	1915	ctggatgagcgcgaatgactgg	219730	-	-	-	-
16645	P15RS	NM_018170.2	651	tggtagaggtcgtgtatgttg	219749	-	kinase related	-	-
16646	SKP2	NM_005983.2	739	tggacctatggaactcagttata	219765	-	see also 4182 line	-	-
16647	STAP2	NM_017720.1	745	tggagcccgctgtcaactatttc	219811	-	kinase related	-	-
16648	TSKS	NM_021733.1	564	tggaggggtactgcaactcaact	219818	-	-	-	-
16649	DHRS2	NM_005794.2	1012	ctgctggggtcactagaacact	219829	-	-	-	-
16650	HSD17B2	NM_002153.1	217	cagtactatgtggagcagttatt	219839	-	estradiol 17 beta- dehydrogenase	-	-
16651	HSD17B3	NM_000197.1	110	tggcgaaagtgcgtgagattctcc	219866	-	estradiol 17 beta- dehydrogenase	-	-
16652	HSD17B7	NM_016371.1	679	caggtagcagcatigaccatttg	219890	-	estradiol 17 beta- dehydrogenase	-	-
16653	HSD17B8	NM_014234.3	465	ttgtcgtgttccatcatcaaca	219898	-	estradiol 17 beta- dehydrogenase	-	-
16654	H105E3	NM_015922.1	229	aagtcgacggactcatttgaca	219901	-	see also 5551 line	-	-
16655	HSD3B1	NM_000862.1	679	gtgccttacgaccatgtatatc	219918	-	steroid delta- isomerase	-	-
16656	HSD3B2	NM_000198.1	691	gtgcgttaagaccacacataatc	219921	-	transcription co- activator	adrenal hyperplasia(副腎皮質過形成)	-
16657	HSD3B7	NM_025193.2	678	cgtgtaaggccaccagatcatga	219927	-	-	-	-
16658	HSPC105	NM_145168.1	599	gaggcgacgggtgtcttaagaacc	219946	-	-	-	-
16659	HSD11B1	NM_005525.2	430	aggactagacatgctcttctca	219964	-	see also 3860 line	-	-
16660	HADH2	NM_004493.1	459	aggcccaacgtgggtcactcatca	219995	-	7-alpha- hydroxysteroid dehydrogenase	Alzheimer disease(アルツハイマー病)	-
16661	LDHA	NM_005566.1	146	cagacccccccagaataagattac	219998	-	L-lactate dehydrogenase	exertional myoglobinuria(労作性ミオグロビン尿症)	-



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16662	LDHB	NM_002300.3	411	aggggagagtcggcctaactgg	220016	-	-	L-lactate dehydrogenase	-
16663	LDHC	NM_002301.2	267	ttgtctattagtagtactga	220041	-	-	-	-
16664	LDHL	NM_033195.1	144	tcgggggagcgaaatttcctatg	220061	-	-	L-lactate dehydrogenase	-
16665	MGC23940	NM_144972.1	309	aggagccattcatcacaataag	220067	-	-	-	-
16666	UEV3	NM_018314.2	233	gtgatgtatcagggtaatacata	220075	-	-	-	-
16667	EHADH	NM_001966.1	1314	cagctcatgtcatgaagtgtta	220131	-	-	enoyl-CoA hydratase	-
16668	HADHSC	NM_005327.1	579	ccgattcgtggcctccattct	220174	-	-	3-hydroxyacyl-CoA	SCHAD deficiency (SCHAD欠損症)
16669	IDH3A	NM_005530.2	338	cagcogtccaccatctatgaat	220187	-	-	isocitrate dehydrogenase (NAD+)	-
16670	IDH1	NM_005896.2	344	tggatctacatagctatgatta	220240	-	-	see also 4099 line	-
16671	IDH2	NM_002168.2	250	gtgatgatgacccgtattatc	220275	-	-	see also 1390 line	-
16672	RDH5	NM_002905.1	881	ctgtgacccggaccctaaccagg	220300	-	-	retinol dehydrogenase	-
16673	RODH-4	NM_003708.2	1558	gggacctatgctggagaagtttgt	220319	-	-	-	-
16674	AKR1A1	NM_006066.2	959	cagtcggcagattgatgacatac	220329	-	-	-	-
16675	AKR1B1	NM_001628.2	983	ctgtacctcccaaggattacc	220344	-	-	electron phosphogluconate dehydrogenase (decarboxylating)	diabetes mellitus (糖尿病)、diabetes (糖尿病)
16676	HIBADH	NM_152740.1	848	gtgttgtaagtgacacttata	220376	-	-	-	-
16677	IMPDH1	NM_000883.2	1403	cgggctcgactgactatgtcttg	220400	-	-	see also 574 line	-
16678	IMPDH2	NM_000884.1	48	atggccgactaccctgattagtg	220412	-	-	IMP	-
16679	ME1	NM_002395.2	1133	gggacgtgcttccttaacacaag	220463	-	-	malate dehydrogenase (oxaloacetate decarboxylating) (NADP+)	-
16680	ME3	NM_006680.1	1690	tgcactacgcgtacaaacacaac	220502	-	-	malate dehydrogenase (oxaloacetate decarboxylating) (NADP+)	-
16681	GBA2	NM_020944.2	2331	tggctccgctcaatgcatttt	220541	-	-	see also 8043 line	-
16682	HMGCR	NM_000859.1	1963	tagctggacgcaacctttatc	220626	-	-	hydroxymethylglutaryl-CoA reductase (NADPH)	-
16683	GPD1	NM_005276.2	421	aagctcatctcgggaagtgtctgg	220655	-	-	glycerol-3-phosphate dehydrogenase (NAD+)	-

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16684	KIAA0089	NM_015141.2	284	tgtgtgcatgtcaaatcttagc	220663	-	-	-	glucose-6-phosphate 1-dehydrogenase	-
16685	G6PD	NM_000402.2	1905	aagcccatcccttatattatgg	220681	-	-	-	carboxyl reductase (NADPH)	-
16686	CBR1	NM_001757.1	877	gagggcccccatggacaatttgt	220687	-	-	-	carboxyl reductase (NADPH)	-
16687	CBR3	NM_001236.2	390	acgagttactccgataatgaaa	220694	-	-	-	prostaglandin-D synthase	-
16688	HPGD	NM_000860.2	404	aagccggcatcattatcaatgtg	220708	-	-	-	see also 4138 line	-
16689	MDH1	NM_005917.2	958	aaggtctccctattatgatcttc	220753	-	-	-	L-malate dehydrogenase	-
16690	MDH2	NM_005918.2	505	ttgccaatccgggttaattccacc	220768	-	-	-	sepiapterin reductase	sepiapterin reductase deficiency(セピアリデン還元酵素欠乏症)
16691	SPR	NM_003124.2	539	aggaaaggctgctgctgatgc	220777	-	-	-	phosphoglycerate dehydrogenase	3-phosphoglycerate dehydrogenase deficiency(3-ホスホグリセリン酸デヒドロゲナーゼ欠乏症)
16692	PHGDH	NM_006623.2	1188	aaggaccatccagggtgataca	220784	-	-	-	see also 2267 line	-
16693	UGDH	NM_003359.1	492	aagatccgtcgcatatttgatg	220802	-	-	-	see also 2731 line	-
16694	BDH	NM_004051.2	368	cgattggccgtcggaactatgc	220842	-	-	-	see also 1541 line	-
16695	ME2	NM_002396.2	93	ttgtccgggttaagagtagtttc	220856	-	-	-	electron	-
16696	AKR1C4	NM_001818.2	690	gggaaccccaacgacataaactat	220906	-	-	-	electron	-
16697	AKR1C3	NM_003739.4	652	cgctatttcaaccggagtagtaatt	220913	-	-	-	see also 5197 line	-
16698	GRHPR	NM_012203.1	44	ggaccgggtcggaactcatgaagg	220946	-	-	-	see also 8764 line	-
16699	UBE1DC1	NM_024818.2	449	cgctaccttggccgtgagcaatag	220995	-	-	-	see also 7024 line	-
16700	HAO1	NM_017545.2	530	atgatgtcgttaacagagattcaaa	221022	-	-	-	glycolate oxidase	-
16701	HAO2	NM_016527.1	1078	cggtcggtcgctgagatcaatc	221022	-	-	-	transcription co-activator	hyperaldosteronism(アルドステロン症)、hypoadosteronism(低アルドステロン症)、low renin hypertension(低レニン高血圧)
16702	CYP11B2	NM_000498.2	889	aaggcgggaactgtcaactagaagc	221024	-	-	-	human cytochromes P450	giant cell hepatitis(巨細胞性肝炎)
16703	CYP39A1	NM_016593.3	1578	agggcaatgccgaattgaatata	221061	-	-	-	Smad3/Sp-1 heterodimer	adrenal hyperplasia(副腎皮質過形成)
16704	CYP7B1	NM_004820.2	395	aagaccccttaaggttcattgaaa	221071	-	-	-	transcription co-activator	adrenal hyperplasia(副腎皮質過形成)、breast cancer(乳癌)、prostate cancer(前立腺癌)
16705	CYP21A2	NM_000500.4	659	aagatcaaggagcagacaacttaat	221111	-	-	-	see also 2952 line	-
16706	CYP17A1	NM_000102.2	1297	atgcctgagcgtttcttgaatcc	221139	-	-	-	human cytochromes P450	adrenal hyperplasia(副腎皮質過形成)、Alzheimer disease(アルツハイマー病)
16707	CYP8B1	NM_004391.1	1621	ctggaggttggggctttccatct	221160	-	-	-	see also 481 line	-
16708	CYP11A1	NM_000781.1	173	cagtcctcgcccttcaatgaga	221164	-	-	-	human cytochromes P450	adrenal hyperplasia(副腎皮質過形成)、Alzheimer disease(アルツハイマー病)
16709	CYP17A1	NM_000780.2	1374	ttgagtcgggagcagcacaatagt	221220	-	-	-	human cytochromes P450	adrenal hyperplasia(副腎皮質過形成)、Alzheimer disease(アルツハイマー病)
16710	CH25H	NM_003956.2	522	tgcgctggcaacagcagtatatg	221225	-	-	-	human cytochromes P450	adrenal hyperplasia(副腎皮質過形成)、Alzheimer disease(アルツハイマー病)
16711	CYP27A1	NM_000784.2	704	cagcgggaagcagcgctctatagc	221233	-	-	-	human cytochromes P450	adrenal hyperplasia(副腎皮質過形成)、Alzheimer disease(アルツハイマー病)

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16712	CYP46A1	NM_006668.1	1195	ggcgagatggacacatacttga	221259	-	-	human cytochromes P450 disulfide oxidoreductase	Alzheimer disease(アルツハイマー病)
16713	FM01	NM_002021.1	753	tggatgacagcgaactcttga	221275	-	-	-	-
16714	FM03	NM_006894.3	746	ctgctgctcaactgattggaac	221315	-	-	see also 4825 line	-
16715	FM04	NM_002022.1	1859	atgtcccttaccctagtagtct	221390	-	-	dimethylalanine monooxygenase (N-oxide forming)	-
16716	FM05	NM_001461.1	922	cagcatccaacctaaatgatga	221412	-	-	see also 1015 line	-
16717	CYP4F8	NM_007253.2	324	tgttcgcatctgtcatcaatacc	221442	-	-	human cytochromes P450	-
16718	SQLE	NM_003129.2	1874	ttgtacaaaagctgttctgtaat	221490	-	-	squalene monooxygenase	-
16719	TYR	NM_000372.2	1330	tagccgattggaggagtacaaca	221509	-	-	monophenol monooxygenase	oculocutaneous albinism(眼皮膚白皮症)
16720	KMO	NM_003679.1	621	atggatcatggagttgactatt	221539	-	-	-	-
16721	CYP27B1	NM_000785.2	1279	ctggtaactctgttcaactatgc	221565	-	-	human cytochromes P450	pseudovitamin D deficiency rickets(ブノイドビタミンD欠乏性クル病)
16722	CYP26A1	NM_000783.2	460	cgcggaggaactcgaatgctacg	221573	-	-	see also 484 line	-
16723	CYP2J2	NM_000775.2	342	gtgacccctatcgagacacatat	221597	-	-	human cytochromes P450	-
16724	COQ6	NM_182476.1	497	ggcctatctgtggagaatgatg	221624	-	-	-	-
16725	CYP19A1	NM_000103.2	510	gtgcacgtggtatcatgagaag	221658	-	-	see also 69 line	-
16726	CYP1A1	NM_000499.2	1432	gtgctatcgacaaaggttgaagt	221691	-	-	CYP1A1.4	oral cavity cancers(口腔癌)、breast cancer(乳癌)、lung cancer(肺癌)
16727	CYP1A2	NM_000761.2	613	tgggcaacttcgaccccttacaatc	221696	-	-	CYP1A2 E225I	lung cancer(肺癌)
16728	CYP1B1	NM_000104.2	1887	cagttatggtctaaccattaaac	221711	-	-	CYP1B1.7	breast cancer(乳癌)、glaucoma(絶対緑内障)、Peters anomaly(ピーターズ奇形)
16729	CYP20A1	NM_020674.2	595	caggcgcctcggtggtggtttgg	221717	-	-	-	-
16730	CYP24A1	NM_000782.2	1832	ttggattgtcgcgaatacagaca	221787	-	-	see also 483 line	-
16731	CYP2B6	NM_000767.4	331	cgggggataggtgtgatatgttg	221791	-	-	human cytochromes P450	lung cancer(肺癌)
16732	CYP2C18	NM_000772.1	973	cagtgctcgggacittattgatt	221800	-	-	human cytochromes P450	-
16733	CYP2C8	NM_000770.2	314	aggcaattcccaaatatctcaaa	221807	-	-	-	-
16734	CYP2C9	NM_000771.2	823	aagcacaacccaaccatctgaatt	221825	-	-	CYP2C9-Arg	Warfarin sensitivity(ワルファリン過敏症)、diabetes mellitus(糖尿病)、mephenytoin 4-hydroxylase C9 defect(メフェニトイン4ヒドロキシラーゼ欠損症)、diabetes(糖尿病)
16735	CYP2E1	NM_000773.2	423	ctgaaccaccctccgggaactatgg	221831	-	-	human cytochromes P450 family	non-hodgkin lymphoma(非ホジキンリンパ腫)、excessive alcohol consumption(アルコール依存症)、lung cancer(肺癌)、alcoholism(アルコール依存症)

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16736	CYP2F1	NM_000774.3	686	cagccctggggcggattgtacg	221856	-	-	human cytochromes P450	-
16737	CYP2S1	NM_030622.5	648	ggatcagacctacgagatgtct	221858	-	-	-	-
16738	CYP3A43	NM_022820.3	178	tggaccaccattccataaacttt	221865	-	-	-	-
16739	CYP3A5	NM_000777.2	971	tgcagccccagtcataatcttc	221880	-	-	human cytochromes P450	-
16740	CYP4B1	NM_000779.2	1419	gtgctgtccgcttggattct	221897	-	-	human cytochromes P450	-
16741	CYP4F11	NM_021187.1	452	ctgctgtogaccccaaggatattg	221898	-	-	human cytochromes P450	-
16742	CYP4F2	NM_001082.3	601	agggtagtgcctgtttggatattg	221906	-	-	human cytochromes P450	-
16743	CYP4F3	NM_000896.1	259	cggaggaaggctctctatcacaca	221909	-	-	human cytochromes P450	Alzheimer disease (アルツハイマー病)
16744	CYP4X1	NM_178033.1	1364	aaggagacgtgccgatgtattcc	221934	-	-	-	-
16745	CYP51A1	NM_000786.2	1830	cagttatccgttacaaacgaaga	221953	-	-	human cytochromes P450	-
16746	FLJ20359	NM_017781.1	94	ggggttcgagcggtcaagagg	221956	-	-	-	-
16747	FLJ39501	NM_173483.1	745	cagcggctctccttgatattgtt	221970	-	-	-	-
16748	LOC11612	NM_138784.1	746	tagtgatcgccattggaattct	221986	-	-	-	-
16749	MICAL2	NM_014632.1	326	aggcatccacgtgcaagggtacc	221991	-	-	-	-
16750	P450RAI-2	NM_019885.2	220	togtcggaggaggagagattgg	222032	-	-	-	-
16751	PAMCI	NM_005447.2	298	gagcttacgtttggagagaacg	222039	-	-	-	-
16752	TBXAS1	NM_001061.2	484	tgtgtcgtcggtatttattgta	222066	-	-	-	-
16753	TYRP1	NM_000550.1	1517	tggccaagtccggagtttagtgt	222129	-	-	monooxygenase	albinism (白児症), xanthism (黄色色素異常症)
16754	PLOD	NM_000302.2	2194	tggacgaactcagcattaccatg	222150	-	-	procollagen-lysine 5-dioxygenase	Ehlers-Danlos syndrome (エーラー・ダンロス症候群)
16755	PLOD2	NM_000935.1	878	atgtocatccaaacgtatcaata	222187	-	-	-	-
16756	PLOD3	NM_001084.3	849	tgtgacgagtggaagtacaag	222234	-	-	procollagen-lysine 5-dioxygenase	-
16757	P4HA1	NM_000917.1	302	aagttagatcggctaactagtac	222255	-	-	-	-
16758	P4HA2	NM_004199.1	1528	ggggaatogtggctactttct	222326	-	-	procollagen-proline, 2-oxoglutarate-4-dioxygenase	breast cancer (乳癌)
16759	P4HB	NM_000918.2	1397	caggacggtcattgattacaacg	222336	-	-	protein disulfide isomerase	-
16760	LOC57168	NM_020437.3	1147	cggacctgattgggaacaattgt	222345	-	-	-	-
16761	BBOX1	NM_003986.1	1183	atgtcaaggctctgtattctaag	222388	-	-	-	-
16762	EGLN1	NM_022051.1	3902	aggacatccggaggagataagatc	222389	-	-	-	-
16763	EGLN3	NM_022073.2	815	ggatctctggagattattccaga	222400	-	-	-	atherosclerosis (粥状硬化症)
16764	FLJ10826	NM_018233.1	1189	aagaccggtcactacacttaatt	222416	-	-	-	-
16765	FLJ22222	NM_024648.1	337	aggtcgtggcaggagattcatc	222423	-	-	-	-
16766	LEPRE1	NM_022356.2	1458	gtgatgacggcgtatctctga	222450	-	-	-	-

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16767	LEPREL2	NM_014262.2	780	gaggcctattaccagttgaaga	222466	-	-	-	-
16768	MLAT4	NM_018192.2	1808	aggctgaaggattgtagaatct	222507	-	-	-	-
16769	PTGS1	NM_000962.2	567	gagctattacactcgtattctgc	222527	-	-	-	-
16770	PTGS2	NM_000963.1	1022	cagagtgcgagtgcttaaac	222571	-	-	-	-
16771	HMOX1	NM_002133.1	406	cagccatgcagcgcctattgaag	222595	-	-	kinase_related	-
16772	HMOX2	NM_002134.2	487	gtggagcggatccactacatagg	222608	-	-	-	-
16773	DAP13	NM_018838.3	366	ctgctcgttaaattcattggacg	222621	-	-	-	-
16774	GRIM19	NM_015965.3	323	gcgcggcggatagttacactac	222633	-	-	apoptosis, transcription_regulat or	-
16775	NDUFA11	NM_175614.1	303	gggagcagcagcacacactacg	222642	-	-	-	-
16776	NDUFA2	NM_002488.2	123	gtgagattcgatccacttatgt	222644	-	-	-	-
16777	NDUFA6	NM_002490.2	15	gcgtcgcgcaagctacttctacc	222652	-	-	see also 1592 line	-
16778	NDUFA7	NM_005001.1	168	aagctctccacaactactattg	222662	-	-	NADH dehydrogenase (ubiquinone)	-
16779	NDUFA8	NM_014222.2	398	tggacttgcatgattatactgg	222667	-	-	NADH dehydrogenase (ubiquinone)	-
16780	NDUFA9	NM_005002.3	668	atgcctcgggttggtcctatacc	222689	-	-	NADH dehydrogenase (ubiquinone)	-
16781	NDUFB1	NM_004545.3	280	ctgccttcgggaacaaagagtatg	222703	-	-	NADH dehydrogenase (ubiquinone)	-
16782	NDUFB10	NM_004548.1	376	aagtcgaccagaagaattatcaac	222711	-	-	NADH dehydrogenase (ubiquinone)	-
16783	NDUFB5	NM_002492.2	391	ttgcccgttaattctatgatagt	222723	-	-	NADH dehydrogenase (ubiquinone)	-
16784	NDUFB6	NM_002493.3	130	ggggtacactccggatgagaac	222736	-	-	NADH dehydrogenase (ubiquinone)	-

lupus erythematosus(円板状エリテマトーデス)、  
colorectal cancer(大腸癌)、esophageal  
cancer(食道癌)、head and neck cancer(頭頸部  
癌)、colorectal cancers(結腸直腸癌)、gastric  
cancer(胃癌)、skin cancer(皮膚癌)

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16785	NDUFB7	NM_004146.4	341	ctgcgagcaccggcgaactatgtga	222740	-	-	NADH dehydrogenase (ubiquinone)	-
16786	NDUFB8	NM_005004.1	273	atgagagagatccatggtatagc	222741	-	-	NADH dehydrogenase (ubiquinone)	-
16787	NDUFB9	NM_005005.1	213	gagcccggtttgaagaacataag	222745	-	-	NADH dehydrogenase (ubiquinone)	-
16788	NDUFC1	NM_002494.2	68	cggcccttcagtcgcatcaaaagt	222751	-	-	NADH dehydrogenase (ubiquinone)	-
16789	NDUFC2	NM_004549.3	310	ttgcacgccagcttctatatat	222761	-	-	NADH dehydrogenase (ubiquinone)	-
16790	NDUFS1	NM_005006.5	1426	cagtcacgtggacccctcactaca	222811	-	see also 3499 line	-	-
16791	NDUFS2	NM_004550.3	855	ttgacccggctagactatgtgtcc	222848	-	-	NADH dehydrogenase (ubiquinone)	-
16792	NDUFS3	NM_004551.1	627	tggctatgttgatgacgttatg	222887	-	-	iron-sulfur electron transfer	-
16793	NDUFS5	NM_004552.1	199	gtgcacatggaatcgggtatact	222899	-	-	NADH dehydrogenase (ubiquinone)	-
16794	NDUFS6	NM_004553.2	141	acgcacactggccagagttatga	222900	-	-	iron-sulfur electron transfer	-
16795	NDUFS8	NM_002496.1	506	cgggaccacccgctatgacatcg	222914	-	-	NADH dehydrogenase (ubiquinone)	Leigh syndrome(リー症候群)
16796	NDUFV1	NM_007103.2	522	cgcgctgcctatatctacatcc	222918	-	see also 4951 line	-	-
16797	NDUFV2	NM_021074.1	599	aggatttgacagctaaggatatt	222933	-	-	iron-sulfur electron transfer	Parkinson disease(パーキンソン病)
16798	NQO1	NM_000903.1	328	aagccgacagacctgtgatattc	222947	-	-	Transcription factor JUN-D	lung cancer(肺癌)
16799	NQO2	NM_000904.1	622	ggagagcagccggagatgtaca	222971	-	-	electron	-
16800	CYB561	NM_001915.2	651	gggcaagtatagcgcatttgagc	222976	-	-	cytochrome b5 reductase	-
16801	CYB5R2	NM_016229.1	383	aggtttgtgacactaatataaa	222984	-	-	-	-
16802	DIA1	NM_000398.3	725	aggaactcaggaacaacattct	223005	-	-	-	methemoglobinemia(メトヘモグロビン血症)
16803	NCB5OR	NM_016230.2	428	aggttcactgttgggtcaattat	223015	-	-	-	-
16804	NNT	NM_012343.2	604	gtgcagccccctatggttaatcc	223082	-	see also 5302 line	-	-
16805	DHDH	NM_014475.2	933	gtgcctacgcaaggatgaagc	223159	-	-	-	-
16806	POR	NM_000941.1	65	agccagtgcccgagaagatctct	223161	-	-	flavodoxin	-
16807	TXNRD2	NM_006440.2	1463	aggtctacacgcccattataaa	223163	-	-	-	-

圖 46 (續)

16808	PRDX3	NM_006793.2	786	aagagtacttccagaaggtaaat	223195	-	-	-			
16809	GMPR	NM_006877.2	313	atgcacagcaactccattttac	223201	-	-	-	GMP reductase		
16810	GMPR2	NM_016576.2	413	gtgaagtgtagctcacaagatoc	223209	-	-	see also 6920 line			
16811	NOX1	NM_007052.3	654	aaggggggttccttggtataatcc	223230	-	-	see also 4939 line			
16812	AASS	NM_005763.2	1962	ggagaccagatgaatcatata	223348	-	-	see also 4023 line			
16813	CAT	NM_001752.1	1369	ctgccaatgatataacgttact	223414	-	-	-	peroxidase	acatalasemia(無カタラーゼ血症)、bladder cancer(膀胱癌)	
16814	EPX	NM_000502.1	321	gcggtccggagaccttaattgca	223421	-	-	-	myeloperoxidase	hereditary eosinophil peroxidase deficiency(-)	
16815	FLJ20473	NM_017836.2	852	gagccaccaccatcgtagaatcc	223449	-	-	-	-	-	
16816	FLJ25471	NM_144651.1	548	aaggccaccttcggtccataaa	223468	-	-	-	-	-	
16817	GPR156	NM_153002.1	1609	cggcggtcacgggttagttcagt	223516	-	-	receptor_activity	-	-	
16818	GPX2	NM_002083.2	134	tggatggggagaaaggtagatttc	223528	-	-	-	selenium binding	-	
16819	GPX3	NM_002084.2	521	ctgacgggcccagtatcatgaaact	223535	-	-	-	selenium binding	-	
16820	GPX4	NM_002085.1	451	acgtcaattcgatatgttcagc	223548	-	-	-	selenium binding	-	
16821	GPX5	NM_001509.1	130	atgaggccactcgcacttaataag	223549	-	-	-	selenium binding	-	
16822	GPX6	NM_015696.2	567	ggggaagctcatctactctaagc	223566	-	-	-	-	-	
16823	HCCA3	NM_020232.3	297	tgggtgctctacagttaagatcc	223573	-	-	-	-	-	
16824	MMS19L	NM_022362.2	2594	atgcogaaagtgcggatcatgttc	223626	-	-	transcription_regulat or,	-	-	
16825	PRDX1	NM_002574.2	598	atgggtcaatacacacctagaaac	223647	-	-	-	-	-	
16826	PRDX2	NM_005809.4	208	gtggttgatgcgcctctcaaaga	223653	-	-	-	thioredoxin	-	
16827	PRDX4	NM_006406.1	344	ctgaagtttaactgattatctgg	223671	-	-	see also 4493 line	-	-	
16828	RTDR1	NM_014433.2	455	gggcagatacgccttcttagagc	223693	-	-	-	-	-	
16829	TPRA40	NM_016372.1	1387	gagcgctggaaggcccatcaatgc	223707	-	-	receptor_activity、 gpcr	-	-	
16830	ACADL	NM_001608.1	772	aggataccgcgagaactattcttt	223732	-	-	-	translation regulator	dicarboxylicaciduria(ジカルボキシ酸性尿)、 hypoglycemia(低血糖症)	
16831	ACADVL	NM_000018.1	279	cggccaaggcgggaatcataagtc	223753	-	-	-	long-chain acyl-CoA	hypoketotic hypoglycemia(低ケトン血性低血糖症)	
16832	GCDH	NM_000159.1	682	tcgcctatggcgcatctgtttgt	223773	-	-	-	-	glutaricaciduria(グルタル酸尿症)	
16833	ACADS	NM_000017.1	296	tggcgggtgcggccctcgattacc	223779	-	-	-	electron transfer flavoprotein	hereditary SCAD deficiency(遺伝性SCAD欠損症)、lipid storage myopathy(脂肪代謝異常によるミオパシー)	
16834	IVD	NM_002225.2	1348	gtgtcggcagtagtgtctacaatg	223801	-	-	-	isovaleryl-CoA dehydrogenase	isovalericacidemia(イソバレーリン酸血症)	
16835	ACAD8	NM_014384.1	725	aaggccatctcatgcatagttgt	223812	-	-	see also 5644 line	-	-	
16836	ACAD9	NM_014049.3	1365	atgagattctccggatgtacatc	223844	-	-	-	-	-	
16837	ACADM	NM_000016.2	1228	ctggtctgcgaaataacctattat	223879	-	-	-	-	-	
										dicarboxylicaciduria(ジカルボキシ酸性尿)、 hypoglycemia(低血糖症)、Reye syndrome A 症候群)、medium-chain acyl coenzyme A dehydrogenase deficiency (MCAD deficiency)(アシルコエンザイムAデヒドロゲナーゼ欠損症)	

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16838	ACADSB	NM_001609.2	1109	aagcgtaatggcacaataactat	223919	-	-	electron transfer flavoprotein	-
16839	SRD5A1	NM_001047.1	690	gagcgtatttgaataactgaact	223941	-	-	electron	pseudohermaphroditism(仮性半陰陽)
16840	SRD5A2	NM_000348.2	381	ggagccttattcagctatact	223948	-	see also 290 line	-	-
16841	DHODH	NM_001361.1	313	ccgtggcagcactttataagatg	223972	-	see also 924 line	-	-
16842	DPYD	NM_000110.2	807	ctgcgtatgatgtagtgaattt	224006	-	see also 93 line	-	-
16843	SDHC	NM_003001.2	141	gagcgggtctggaataagaatat	224072	-	-	succinate dehydrogenase	paraganglioma(傍神経節腫)
16844	ACOX1	NM_004035.4	1714	aagcctaaccgaagcatataaac	224112	-	-	-	pseudoneonatal adrenoleukodystrophy(偽性新生 児副腎脳白質ジストロフィー)
16845	ACOX2	NM_003500.1	1845	ttgactaactcgggtgactttct	224152	-	see also 2359 line	-	-
16846	ACOX3	NM_003501.1	553	aagccacggcagtaataccaaagg	224161	-	-	electron transfer flavoprotein	-
16847	CPO	NM_000097.3	781	gggctgtgagctctgttatccacc	224183	-	-	coproporphyrinoge n oxidase	harderoporphyria(ポルフィリン尿症)、 coproporphyrin(コプロポルフィリン症)
16848	FLJ11164	NM_018346.1	500	aggggttaacagggtgtctatag	224204	-	-	-	-
16849	PPOX	NM_000309.1	1109	gagcgtgacacagcttattgtgc	224221	-	-	protoporphyrinogen oxidase	porphyria(ポルフィリン症)、diabetes(糖尿病)
16850	BLVRA	NM_000712.3	657	gagcgaagaagaagatcagtatat	224233	-	-	electron	-
16851	BLVRB	NM_000713.1	176	gcgggtcaagcagggttaagaggt	224247	-	-	biliverdin reductase	-
16852	DECRI	NM_001359.1	287	aagcgtgtatcaccactaatagt	224255	-	see also 923 line	-	-
16853	SDHB	NM_003000.1	544	aggatottgttcccgatttgagc	224297	-	-	succinate dehydrogenase (ubiquinone)	paraganglioma(傍神経節腫)、 phaeochromocytoma(褐色細胞腫)
16854	FADS1	NM_013402.3	1351	ccgacatcatccactcactaaag	224311	-	-	-	-
16855	SC5DL	NM_006918.2	263	aagtcogctgagagattaagttt	224324	-	-	C-5 sterol desaturase	-
16856	TD02	NM_005651.1	1092	gtggttctcaggctactactac	224378	-	see also 3920 line	-	-
16857	HPD	NM_002150.2	327	ttgcttcgaggtggaagattgt	224388	-	-	4- hydroxyphenylpyru vate dioxygenase	-
16858	INDO	NM_002164.3	1143	gagctaccatctgcaaatcgtga	224422	-	-	indoleamine- pyrrole 2, 3- homogentisate 1, 2-dioxygenase	-
16859	HGD	NM_000187.1	317	ttgtccacggagcaccataaga	224429	-	-	electron	alkaptonuria(アルカプトン尿症)
16860	OD01	NM_001801.1	422	caggtataccggaaatctgtgg	224458	-	-	-	Parkinson disease(パーキンソン病)
16861	BCD01	NM_017429.1	1623	gaggtatcaggagtaattcttctc	224499	-	see also 7003 line	-	-
16862	BCD02	NM_031938.1	951	gtgtaatacgggtttcattgg	224539	-	see also 9058 line	-	-
16863	FLJ32115	NM_152321.1	473	gggtttattcaacagcagcgaattca	224572	-	-	-	-
16864	TMLHE	NM_018196.1	1029	gtgccattgaagcatgaatatat	224602	-	see also 7312 line	-	-
16865	ALDRL6	NM_017584.4	842	aggggctcttgacaagactctgc	224612	-	-	-	-
16866	ERP70	NM_004911.3	525	aagcagtttgtctccggaatatga	224622	-	-	protein disulfide isomerase	-



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16867	P5	NM_005742.2	221	tgaattaactccatcgaatttc	224650	-	-	protein disulfide isomerase	-
16868	PDIP	NM_006849.1	1137	ttgggacacagcggccagtgtaaga	224680	-	-	protein disulfide isomerase	-
16869	PDIR	NM_006810.1	1105	cagagtttcctacgttgagtgat	224708	-	see also 4785 line	-	-
16870	TXN	NM_003329.1	106	ttggacgtcgcagtgataaact	224717	-	signal transduction	electron	-
16871	TXN2	NM_012473.3	270	caggatggacgtgacttcaaga	224722	-	-	electron	-
16872	TXNL	NM_004786.1	271	cagactgcgcgttggtcaagtcca	224727	-	see also 3300 line	-	-
16873	AMID	NM_032797.4	867	atgagatcagagatcacataaa	224761	-	see also 9265 line	-	-
16874	FLJ22028	NM_024854.1	332	tggcaatcagcacgtataaaga	224772	-	-	-	-
16875	FLJ23322	NM_024955.4	1213	tggagctagctacgaatccaaag	224798	-	-	-	-
16876	FLJ30473	NM_144704.1	1681	gcgcgtggcagccagacaatgt	224821	-	-	-	-
16877	MT01	NM_012123.1	1097	atgacgtaccagctgagttaca	224845	-	-	-	-
16878	PDCD8	NM_004208.2	1494	ctgcatcttctacgatatataag	224934	-	see also 2816 line	-	-
16879	SQRDL	NM_021199.1	479	aagatctctaccgatatcttat	224959	-	-	-	-
16880	ALDH1A2	NM_003888.2	361	aaggggacgtctgttgataaagc	225006	-	-	-	-
16881	ALDH2	NM_000690.2	1843	gtgtgggtcaactgctatgatgt	225053	-	-	electron transporter	colorectal cancer(大腸癌)、alcohol abuse inhibitory factor(アルコール乱用抑止因子)、uterine leiomyoma(子宮平滑筋腫)、alcoholism(アルコール依存症)、colorectal cancers(結腸直腸癌)
16882	ALDH3A2	NM_000382.1	911	ctgcattgcacccacgtatatttc	225071	-	-	aldehyde dehydrogenase (NAD+)	Sjogren-Larsson syndrome(Sjogren-Larsson症候群)
16883	ALDH4A1	NM_003748.2	733	gggcaacgtgtctctatggaagc	225098	-	-	-	hyperprolinemia(高プロリン血症)
16884	ALDH7A1	NM_001182.1	1056	atgggacccctaattgttctctatg	225117	-	-	aldehyde dehydrogenase (NAD+)	-
16885	ALDH9A1	NM_000696.2	781	caggtggatcgtttggttatacc	225155	-	-	electron	-
16886	ALDH1A3	NM_000693.1	460	ctgtattagaacccctcagataact	225202	-	-	aldehyde dehydrogenase (NAD(P)+)	-
16887	ALDH3A1	NM_000691.3	1146	cagcaacgcacaaggtgattaaga	225237	-	-	electron	-
16888	ALDH3B2	NM_000695.2	421	acgggtccacgaacctgttctatga	225240	-	-	aldehyde dehydrogenase (NAD(P)+)	-
16889	GAPDS	NM_014364.3	704	ctggtccatgaacattgtgagc	225249	-	-	glyceraldehyde 3-phosphate dehydrogenase (phosphorylating)	-
16890	ALDH5A1	NM_001080.3	1124	aaggaacctgcgcgtaggttaagc	225278	-	-	-	-
16891	ALDH6A1	NM_005589.2	843	ttgcgatcatcgggacatcaaac	225320	-	see also 3880 line	-	-
16892	PDHA1	NM_000284.1	1042	aagagtgacctattatgtcttct	225349	-	-	pyruvate dehydrogenase (lipoamide)	-

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16893	PDHA2	NM_005390.3	660	cagatagccgaagccttcaatat	225370	-	-	-	-	-	-
16894	PDHB	NM_000925.1	115	gtacagcttgatgctataaa	225382	-	-	-	-	-	-
16895	BCKDHA	NM_000709.2	195	ggggcctcggcggagttataga	225409	-	-	-	-	-	-
16896	BCKDHB	NM_000056.2	233	ccggaggtacagggcaaacacaga	225434	-	-	-	-	-	-
16897	DHTKD1	NM_018706.4	1314	cagttccgaaggatgtattat	225522	-	-	-	-	-	-
16898	FLJ10851	NM_018245.1	2978	ggcgcacggcccatatgtatg	225581	-	-	-	-	-	-
16899	COX11	NM_004375.2	270	aagagctcgaaccccttcacacg	225585	-	-	-	-	-	-
16900	COX15	NM_004376.3	378	ctggcctctcagatgtagattgg	225587	-	-	-	-	-	-
16901	COX4I2	NM_032609.2	442	cagcgggtctacgtattctctcc	225609	-	-	-	-	-	-
16902	COX5A	NM_004255.2	297	cggcagtcagacaggttaaatga	225624	-	-	-	-	-	-
16903	COX5B	NM_001862.2	134	tgggtttccactgatgaagagc	225630	-	-	-	-	-	-
16904	COX6B	NM_001863.3	296	ccgctaagaggaggagatatctct	225636	-	-	-	-	-	-
16905	COX6C	NM_004374.2	108	caggcgtctcgaatacatatgg	225638	-	-	-	-	-	-
16906	COX7A2L	NM_004718.2	171	ttgcacacacactaaactgacc	225646	-	-	-	-	-	-
16907	COX7A3	NM_183003.1	263	cagcaatcacttggttcacattc	225655	-	-	-	-	-	-
16908	COX7B	NM_001866.2	247	tggacatatgtagcaacacaagt	225660	-	-	-	-	-	-
16909	COX7C	NM_001867.2	191	gtggctgtactagctaagatgt	225664	-	-	-	-	-	-
16910	CYB5	NM_001914.1	98	aggtgtacgattgaccacaaatt	225672	-	-	-	-	-	-
16911	SURF1	NM_003172.2	748	caggcgcagagcccatcttcaatt	225680	-	-	-	-	-	-
16912	FLJ13852	NM_023078.1	735	ccgggtggcaccaccatcatatgg	225688	-	-	-	-	-	-
16913	LOC12294	NM_138791.1	562	ttgcggcctcagttatcagataga	225705	-	-	-	-	-	-
16914	P5CR2	NM_013328.2	228	ctgtcggctcacaagaataatgc	225712	-	-	-	-	-	-
16915	QDPR	NM_000320.1	789	acggaaactcaccaccagcatatt	225737	-	-	-	-	-	-
16916	PRODH	NM_016335.2	503	taggcacagagctattcaacaag	225740	-	-	-	-	-	-
16917	PRODH2	NM_021232.1	1147	aagctggtagaggtgcatatct	225752	-	-	-	-	-	-
16918	ETFDH	NM_004453.1	1717	cagccggcacacttaaccttaag	225801	-	-	-	-	-	-

maple syrup urine disease(メーブルシロップ尿症)

3-methyl-2-oxobutanoate dehydrogenase (lipoamide)

electron

cbb3-type cytochrome c oxidase

electron

cbb3-type cytochrome c oxidase

cbb3-type cytochrome c oxidase

cbb3-type cytochrome c oxidase

cbb3-type cytochrome c oxidase

cbb3-type cytochrome c oxidase

cbb3-type cytochrome c oxidase

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leiomysoma(血管筋腫)

methemoglobinemia(メトヘモグロビン血症)

Leigh syndrome(リー症候群)

hyperprolinemia(高プロリン血症)、schizophrenia(精神分裂病)

proline dehydrogenase

see also 2985 line

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16919	PIPOX	NM_016518.1	477	caggaggaggttatctatgcatat	225817	-	see also 6899 line	amine oxidase (flavin-containing)	alcoholism(アルコール依存症)
16920	MAOA	NM_000240.2	972	atgagtgcaaatcagtaataat	225842	-	-	-	-
16921	MAOB	NM_000898.3	319	tggacacacccagaaatctgtatct	225858	-	see also 583 line	-	-
16922	PNPO	NM_018129.1	781	ctgctgacacgagtagctttctcg	225925	-	see also 7270 line	-	-
16923	DAO	NM_001917.3	537	tgtttccacacagcctaattct	225929	-	see also 1221 line	-	-
16924	GLDC	NM_000170.1	401	tggcagcattgatgaattgctc	225947	-	see also 142 line	-	-
16925	MEGF11	NM_032445.1	2930	aagaaggttgcggtcataactcc	226015	-	-	-	-
16926	QP-C	NM_014402.2	177	tgcgtgtgtccgcagttttag	226023	-	-	PALNuclear respiratory factor- 1-1	-
16927	UOCR	NM_006830.2	73	gggtcccgacggcctcacacatgg	226029	-	-	ubiquinol- cytochrome c reductase	-
16928	UQCRFS1	NM_006003.1	888	cagtgacgatattggtgattgtg	226041	-	-	ubiquinol- cytochrome c reductase	-
16929	AKR1B10	NM_020299.3	1155	ggccctgtaacgtgttgcaatcc	226043	-	-	electron lyase	-
16930	PCYOX1	NM_016297.2	584	atgcttaatcgaacacctcttga	226070	-	-	protein- methionine-S-	-
16931	MSRA	NM_012331.2	496	tgcagaggagctatacttcaaat	226113	-	-	-	-
16932	RRM1	NM_001033.2	1980	caggcccatcacggaacctatga	226213	-	see also 631 line	-	-
16933	RRM2	NM_001034.1	1222	tagagaacccattgaactttatg	226234	-	see also 632 line	-	-
16934	RRM2B	NM_015713.2	264	cagcagaagagtgctgactttca	226239	-	-	-	-
16935	MDGA1	NM_153487.2	1456	ctgcgcattcagcgtattgacag	226256	-	-	-	-
16936	FDXR	NM_004110.2	553	ctgtgacacacgcgtgattctgg	226280	-	-	C-4 methyl sterol oxidase	-
16937	SC4MOL	NM_006745.2	731	gggcattgggtgaccattcgttta	226300	-	-	-	-
16938	AKR1D1	NM_005989.1	542	aagacgctgctgttggaatcc	226324	-	see also 4183 line	aldehyde dehydrogenase (NAD+)	-
16939	ALDH1B1	NM_000692.3	718	aggcaacacitgtggttatgaagg	226341	-	-	-	-
16940	ALDH8A1	NM_022588.2	1283	aagagccaacaacgttaagtatg	226375	-	see also 8421 line	alpha-methylacyl- CoA racemase	-
16941	AMACR	NM_014324.3	439	coggttagctggccacagatatca	226382	-	-	-	-
16942	C10orf33	NM_032709.1	102	cggcgtggagacgagataaacag	226404	-	-	-	-
16943	CED-6	NM_016315.1	636	gtggaggttcaaatataaattta	226435	-	see also 6804 line	-	-
16944	CHDH	NM_018397.1	1489	gagtgtgggtggctcacaactga	226455	-	see also 7439 line	-	-
16945	CRYL1	NM_015974.1	449	atgatcagtgatcttaagcagt	226471	-	-	oxidoreductase, acting on CH-OH group of donors	-
16946	CYB5R1	NM_016243.1	381	aagggtgtgcaccccaatttcc	226481	-	-	-	-
16947	CYBB	NM_000397.2	96	tggattaccgggttttatgat	226487	-	see also 319 line	-	-
16948	DCXR	NM_016286.1	386	caggggccatcgtgaattgtctcc	226537	-	-	-	-

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16949	DECR2	NM_020664.3	576	gaggggtgctgctgaacatcact	226545	-	-	-	-
16950	DHCR24	NM_014762.1	1421	ggagcgcgcgtgtaaacacitt	226564	-	-	see also 5949 line	-
16951	DHCR7	NM_001360.1	605	aggggttgtaacaaagtacaga	226570	-	-	oxidoreductase	Smith-Lemli-Opitz syndrome (Smith-Lemli-Opitz 症候群)
16952	DHRS1	NM_138452.1	531	gtactgtgcaacaagtctatgc	226578	-	-	-	-
16953	DHRS10	NM_016246.1	636	atggtgtccgagtaacactgac	226596	-	-	-	-
16954	DHRS7	NM_016029.1	163	acagcgacctgacgctactatgg	226600	-	-	-	-
16955	DHRS8	NM_016245.1	553	gtatgtatatacaatcagatttg	226632	-	-	-	-
16956	DHRS9	NM_005771.3	2098	gtcacgctcattcattgaacc	226660	-	-	see also 4026 line	-
16957	DHRSX	NM_145177.1	134	ctgacccgtgctgctatagtgaag	226666	-	-	-	-
16958	DKFZp566					-	-	-	-
16958	O084	NM_015510.3	426	tggttatgtcgacatacttgca	226678	-	-	-	-
16959	ERO1LB	NM_019891.2	944	aagcttatatcggaactctatgc	226709	-	-	see also 7747 line	-
16960	FADS2	NM_004265.2	1041	ctgggcccgtgactactacatcc	226739	-	-	see also 2865 line	-
16961	FADS3	NM_021727.3	973	ctgctcaccctgtggaacttga	226747	-	-	-	-
16962	FLJ11042	NM_018308.1	220	ctgaccccttcgagattagctgt	226754	-	-	-	-
16963	FLJ11577	NM_025159.1	1092	tagccctattgcaattgatgt	226786	-	-	-	-
16964	FLJ12661	NM_025138.2	1471	tggtaccattagcgaatgtcata	226800	-	-	-	-
16965	FLJ20643	NM_017916.1	359	cagaccagaatcgacacaaatcc	226853	-	-	-	-
16966	FVT1	NM_002035.1	804	ttggagactgactatttcaga	226878	-	-	oxidoreductase	follicular lymphoma (濾胞性リンパ腫)
16967	FZD7	NM_003507.1	1346	ctgttcgtctacattctcatagg	226892	-	-	receptor activity, gpcr, signal transduction	-
16968	GMIP	NM_016573.1	1789	gtgcacggctgagatagaacacc	226904	-	-	frizzled receptor	-
16969	H17	NM_017547.2	337	tggaaacgggacacacacgtattca	226914	-	-	see also 7028 line	-
16970	HSD17B12	NM_016142.1	473	gtggaaatgtgtatgagtatcc	226943	-	-	-	-
16971	KIAA0769	NM_014824.1	1843	gagcaataatcogtatcttgaaac	227028	-	-	see also 6026 line	-
16972	KREMEN2	NM_024507.2	926	gcggctggcgctctatgaagtgt	227037	-	-	signal transduction	-
16973	USCH7	NM_015925.3	1690	aggtctccacagagtaattgtgg	227041	-	-	see also 6573 line	-
16974	LOC28398	NM_178128.2	1111	ccgtcgtctatgaggaattcatgg	227053	-	-	-	-
16975	MAWBP	NM_022129.1	677	tgttgggcagaccacaaagatttg	227062	-	-	oxidoreductase	-
16976	MGC10204	NM_153329.2	1616	ctgcgcgtggcgcctgaataagg	227073	-	-	-	-
16977	MGC11335	NM_030819.2	651	cagctgatttcggaaacactatgt	227079	-	-	-	-
16978	MGC15763	NM_138381.1	496	aggctgcgtcactgagatigaca	227085	-	-	-	-
16979	MGC23280	NM_144683.2	504	ccggaacccgtgagcggttaacc	227111	-	-	-	-
16980	MGC4172	NM_024308.2	554	atgtctggccaccagagtgtaacc	227134	-	-	-	-
16981	MRPS30	NM_016640.2	537	ggaggagcggaggttaatttt	227143	-	-	see also 6964 line	-
16982	NOX3	NM_015718.1	1684	cagcagatttggcgtgtctctct	227201	-	-	see also 6541 line	-
16983	NR1	NM_014434.1	1773	ccggagcgcagccgcgtatctagc	227216	-	-	-	melanoma (メラノーマ)
16984	PECR	NM_018441.2	333	ttgttcaaatctaccattagatagac	227222	-	-	apoptosis	-
16985	PHYH	NM_006214.2	908	cagtcgcgatttgcactacatttg	227276	-	-	oxidoreductase	Refsum disease (レフサム症候群)
16986	RDH-E2	NM_138969.2	985	toggcgatgttccatctcaatc	227290	-	-	-	-
16987	RDH10	NM_172037.1	978	ttgtttgccccttattctttaga	227312	-	-	see also 10033 line	-
16988	RDH11	NM_016026.2	709	tggcgttacgactattctgtac	227336	-	-	see also 6626 line	-

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16989	RDH12	NM_152443.1	1088	cagctgtgagcttcttaggaatcc	227352	-	-	-
16990	RDH13	NM_138412.2	1117	aagtacttcgtaggactcaaca	227363	-	-	-
16991	RDH14	NM_020905.1	804	tggatgttacggacaatacttgg	227376	-	-	-
16992	RDH4	NM_003725.2	933	gtgcacccgcgaactcgtatctc	227396	-	-	-
16993	SCDR9	NM_178135.2	340	gagatctatcgtctcttaaatca	227413	-	-	-
16994	SDR-O	NM_148897.1	696	cagctacggagaggattattcc	227440	-	-	-
16995	SELO	NM_031454.1	737	gtcgcgagagtgtctatgatgg	227447	-	see also 9033 line	-
16996	SEPW1	NM_003009.1	212	atggttagcgggaagtgtatca	227458	-	-	selenium binding
16997	SHREW1	NM_018836.2	447	aagccatgcctggatactgtag	227461	-	-	-
16998	SLC35C2	NM_015945.1	638	ccgtctcgtgtacacaaatgacc	227473	-	-	-
16999	TM7SF2	NM_003273.1	938	tccctcgcctatctatctaaag	227484	-	-	oxidoreductase
17000	TSTA3	NM_003313.2	59	caggagatccatcgggattctagt	227488	-	-	oxidoreductase
17001	ANAPC2	NM_013366.2	1485	gcggcgttcacgcgaacatca	227506	-	cell_cycle、 kinase_related	-
17002	ANAPC4	NM_013367.1	503	tggagagacgcaggcttaatt	227519	-	see also 5410 line	-
17003	ANAPC5	NM_016237.3	2183	gcgcacatcaggagcgtgtttact	227626	-	see also 6739 line	-
17004	APC10	NM_014885.1	245	ctgtttggtaactctactcttgc	227629	-	cell_cycle	-
17005	C14orf130	NM_018108.2	1092	aggagcgcctccctaatggatgc	227657	-	see also 7256 line	-
17006	C6orf133	NM_015255.1	801	tgggctaggctctgttgatgatg	227687	-	-	-
17007	CDC34	NM_004359.1	294	tgtgtggacgaggcgcgatctatc	227832	-	cell_cycle	ubiquitin-protein ligase
17008	CEB1	NM_016323.1	369	cggacgcgaaatgcattaaatt	227839	-	cell_cycle、 kinase_related	-
17009	DD5	NM_015902.3	4528	ctggctagtactagcatagatgc	228044	-	-	ubiquitin-protein ligase
17010	DKFZP564					-	see also 6502 line	-
17011	G092	NM_015601.2	3172	caggtagtgcgcttctctatt	228245	-	-	-
17012	E2-230K	NM_022066.2	2002	ctgacacccctgacttttaggttc	228273	-	-	-
17013	FBXL3A	NM_012158.1	817	ctgtcttcgcttaagatagatga	228320	-	see also 5154 line	-
17014	FBXL3B	NM_012159.1	1029	ctgtcttcgactgctgagtttag	228376	-	-	-
17015	FBXL5	NM_012161.2	1438	ctgtttgcacgatttaactaaca	228413	-	see also 5162 line	-
17016	FBXL6	NM_012162.1	946	cggcatcaacgtaataagcattc	228426	-	-	-
17017	FBXL7	NM_012304.3	1707	tggcgaatgcctttgtgtatoc	228436	-	-	-
17018	FBXL11	NM_012167.1	1539	atggattaccctcaaatagtgaoc	228479	-	-	-
17019	FBXL2	NM_012168.2	824	acgatgagagcgtcaagaagtac	228529	-	-	ubiquitin-protein ligase
17020	FBXL21	NM_015002.1	841	gggaatcgaatggattactata	228553	-	see also 6184 line	-
17021	FBXL24	NM_012172.2	774	gtgacacagtttaacgtaataac	228576	-	-	-
17022	FBXL3	NM_012175.2	1101	caggtcggatgatgaatacaca	228624	-	see also 5178 line	-
17023	FBXL4	NM_012176.1	828	atgttcagtcgacacaaatgaagg	228650	-	-	-
17024	FBXL5	NM_012177.2	171	tgcacccctcggatagttgtaag	228662	-	-	-
17025	FBXL7	NM_012179.2	519	atgacattccagcgcctaataa	228713	-	see also 5180 line	-
17026	FBXL9	NM_012347.2	832	cggcctcgtgttcggtttgtagg	228769	-	-	-
17027	FBXL1B	NM_012300.1	1373	aggagatgcctgtgtgttagtg	228817	-	see also 5267 line	-

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17027	FLJ11011	NM_018299.1	367	aagagcagaccaccggaataattc	228863	-	transcription_regulat	-	-
17028	FLJ13855	NM_023079.2	943	ttgatgcctcctggactgatacg	228881	-	see also 8548 line	-	-
17029	FLJ25157	NM_152653.1	681	cagcattccacacagatcatga	228892	-	-	-	-
17030	FTS	NM_022476.1	855	aagaccctatgaattagcttt	228917	-	-	-	-
17031	HAGE1	NM_020771.2	2456	gagtagctccagcttgattctga	228993	-	see also 7947 line	-	-
17032	HECTD1	NM_015382.1	2829	atggctcagagattatcatga	229083	-	receptor_activity	-	-
17033	HERC1	NM_003922.1	11203	tggcattctcctaagatactac	229527	-	see also 3188 line	-	cowden disease(外毛根鞘腫)、leukemia(白血病)
17034	HERC2	NM_004667.2	13250	gagcaggctttccggaaagtagt	229707	-	see also 5769 line	-	-
17035	HERC3	NM_014606.1	2550	gtggactagctatctacaactcc	229792	-	see also 3728 line	-	-
17036	HIP2	NM_005339.3	387	atgactctccacaggtattatt	229824	-	see also 5525 line	-	-
17037	HSPC150	NM_014176.1	226	ctgcagctcaaatattagttgg	229842	-	-	-	-
17038	ITCH	NM_031483.3	1059	cagcacgggaggtttactatgt	229881	-	-	-	-
17039	KIAA0010	NM_014671.1	3151	gagtgcctcgaattgttgatca	230017	-	see also 5849 line	-	-
17040	KIAA0317	NM_014821.1	1814	gagagcttcggcaggtacattg	230065	-	see also 6017 line	-	-
17041	KIAA0322	NM_015052.1	4507	ctgcgttgagcgccttcaataat	230151	-	see also 6210 line	-	-
17042	LOC51619	NM_015983.2	468	aggccagacagagagaagtacaac	230161	-	-	-	-
17043	LOC92912	NM_173469.1	1257	gagcccaacaattctataattcc	230173	-	-	-	-
17044	MGC35130	NM_152489.1	381	cagtttgcaggggttagttcttc	230180	-	-	-	-
17045	NCE2	NM_080678.1	348	aagttccagatgcgtacaacatg	230202	-	-	-	-
17046	NEDD4	NM_006154.1	798	aagcacaaacgfcattaccacc	230234	-	see also 4260 line	-	-
17047	RBAF600	NM_020765.1	13901	tggtagcgcattcaaacaccatc	230724	-	-	-	-
17048	SMURF1	NM_020429.1	1549	aggagttctaccgccagataatg	230786	-	see also 7871 line	-	-
17049	SMURF2	NM_022739.2	2267	aggcccgagactctttaccatc	230863	-	transcription_regulat	ubiquitin-protein ligase	-
17050	TRIP12	NM_004238.1	4552	cagtcgatactggtattacttgt	230994	-	see also 2828 line	-	-
17051	UBE2A	NM_003336.2	591	aagcgtgtttctgcaatagtaga	231075	-	-	-	-
17052	UBE2B	NM_003337.2	448	cgggatttcaagcgggttacaaga	231078	-	see also 2257 line	-	-
17053	UBE2D1	NM_003338.3	585	cagatattgcacaaatctataaa	231113	-	see also 2258 line	-	-
17054	UBE2D2	NM_003339.2	903	tggctccagcactaactatttc	231119	-	-	ubiquitin-protein ligase	-
17055	UBE2E1	NM_003341.3	509	aggttacatttcggacaagaatc	231134	-	-	ubiquitin-protein ligase	-
17056	UBE2G1	NM_003342.3	470	ccgattgggaagtcctattatttg	231144	-	see also 2259 line	-	-
17057	UBE2G2	NM_003343.4	329	atggagagagtcgtcaattccatc	231160	-	-	-	-
17058	UBE2H	NM_003344.2	454	gagtaaacataggttacgatcc	231162	-	-	-	-
17059	UBE2I	NM_003345.3	540	cagagcctctacacgattactgc	231193	-	-	-	-
17060	UBE2J1	NM_016021.2	353	aagagtcgggtctgtaaacggtt	231195	-	see also 6622 line	-	-
17061	UBE2J2	NM_058167.2	671	ctgaagtcgtggagagattaaa	231242	-	-	-	-
17062	UBE2L6	NM_004223.3	331	gtggacgagaacggacagatttg	231249	-	-	ubiquitin-protein ligase	-
17063	UBE2R2	NM_017811.2	804	ttgcttaacagacactgtatga	231308	-	see also 7156 line	-	-
17064	UBE2V2	NM_003350.2	242	cagaagctctcctcgctcagtaga	231316	-	cell cycle	-	-
17065	UBE3A	NM_000482.2	1577	aagttagcgtgaccatcata	231363	-	see also 364 line	-	-

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17066	UBE3B	NM_130466.2	3303	tagcggaattccgtccattatca	231466	-	see also 9545 line	-
17067	UBR1	NM_174916.1	3834	tggcgttgagtcttcgattaaat	231583	-	see also 10125 line	-
17068	C6orf104	NM_031949.2	611	tcgtcatgcccaatgaactatacc	231643	-	-	-
17069	FLJ35808	NM_173623.1	593	gttagagggttcgcactgatttat	231682	-	-	-
17070	FLJ36119	NM_153254.1	869	ttgatgaacccacagataggatc	231709	-	-	-
17071	KIAA0153	NM_015140.1	1449	acgggttgctgtgtatgtgt	231715	-	tubulinyl-tyrosine ligase	-
17072	KIAA0173	NM_014640.1	1342	tggaaacctctcgcgtaaatca	231734	-	-	-
17073	KIAA0998	NM_015072.2	111	atgatcgcgaggtggttatt	231786	-	-	-
17074	LOC15813	NM_194252.1	1357	atgagcacgaagggtgttgaaa	231855	-	-	-
17075	TTL	NM_153712.2	808	tgttgatcatcagtaataatc	231878	-	see also 10017 line	-
17076	TTL1	NM_012263.2	1152	atgctatggctacgacatcatca	231903	-	tubulinyl-tyrosine ligase	-
17077	GCLC	NM_001498.1	1824	aggaggtttatcgcaaacatcc	231958	-	see also 1027 line	-
17078	GCLM	NM_002061.1	372	gcgagggagcttcattgtatc	231964	-	translation	malignant mesothelioma(悪性中皮腫)
17079	PAICS	NM_008452.2	264	aagtctacgaattgttagacagt	231985	-	-	-
17080	MCCC2	NM_022132.3	1189	gggtaccacagtaggtatcgttgg	232027	-	-	methylcrotonylglycinuria(メチルクロトニルグリシン 尿症)
17081	PCCB	NM_000532.2	403	aggccgaatcaatggaagattgg	232047	-	-	hyperglycinemia(高グリシン血症)、propionic acidemia(プロピオン酸血症)
17082	CTPS	NM_001905.1	457	caggcgttaatacctgttagatga	232082	-	see also 1218 line	-
17083	CTPS2	NM_019857.3	1688	cagacatcgttcgtggaataacc	232140	-	see also 7740 line	-
17084	HLCS	NM_000411.3	1617	cagacctccctcagattatagc	232152	-	see also 325 line	-
17085	ASNS	NM_001673.2	814	ctgcagccctctatgacaagt	232190	-	-	-
17086	LIAS	NM_008859.2	842	cagtcctactgtgtactgaaca	232213	-	-	-
17087	GLUL	NM_002065.3	885	cagatgggaccccttgggttgg	232238	-	-	glutamate- ammonia ligase
17088	GLULD1	NM_016571.1	1126	ctgccgaagcgttatcccaagg	232281	-	see also 6919 line	Alzheimer disease(アルツハイマー病)
17089	HAL	NM_002108.2	1134	ctggcgtgatgtaaatatagctgc	232319	-	see also 1359 line	-
17090	BCL7C	NM_004765.2	248	ggcgacacactccctcgttatct	232340	-	-	-
17091	ROL1	NM_005772.2	302	cagcttcataaggctattggaca	232346	-	see also 4030 line	-
17092	SLC27A2	NM_003645.2	669	ctgggtgtccgcagaactacaagc	232375	-	-	long-chain-fatty- acid-CoA-ligase
17093	SLC27A5	NM_012254.1	1639	gcggcaatcggcgacggtttact	232432	-	-	-
17094	SLC27A6	NM_014031.1	1693	gtggctatatcaggttatgaagg	232474	-	-	-
17095	SUCLA2	NM_003850.1	1107	tgtgtctacagtcatacgaagtaa	232516	-	-	succinate-CoA ligase (ADP- forming)
17096	ACAS2L	NM_032501.2	1879	tggccgacatcgttgattaca	232532	-	see also 9222 line	-
17097	AACS	NM_023928.2	281	tgtgtcgttgagtcattatcaga	232546	-	-	-
17098	BIRC6	NM_016252.1	3629	gtgtatcgctcgttagtaagg	232678	-	see also 6755 line	-
17099	BTRC	NM_003939.2	1527	ttgggtcgttgatttcgtttga	233052	-	see also 2696 line	-
17100	C20orf18	NM_006462.2	1543	ggaggtaccagcgtttctaga	233063	-	-	Alzheimer disease(アルツハイマー病)
17101	GGCX	NM_000821.2	1297	tggcgaactggcgtacottaacc	233162	-	see also 520 line	-

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17102	LPT1	NM_015929.2	1176	tgggtgccattggaaatacgtga	233218	-	-	-	-
17103	MOCS3	NM_014484.3	257	ggggacgcgtgcgtctaataog	233257	-	-	ligase	-
17104	PARC	NM_015089.1	6871	aagcgggttcaggactataatga	233344	-	-	-	-
17105	RNF25	NM_022453.2	855	ctgagcgaaccgcgatacttcac	233359	-	-	see also 8361 line	-
17106	UBE1	NM_003334.2	378	gggcgtgagatogctaaagaaca	233369	-	-	-	-
17107	UBE1L	NM_003335.2	913	ttgcgtgtgggctctatcaactga	233413	-	-	ubiquitin conjugating	small cell lung cancer(肺癌), non-small-cell lung cancer(非小細胞肺癌)
17108	C18B11	NM_152280.1	960	ctgtaaagaaccatcttagtgg	233438	-	-	-	-
	CLONE249								
17109	22	NM_015679.1	349	caggctctcaccgatattgtaca	233451	-	-	-	-
17110	FLJ14494	NM_032795.1	216	cagcggagagtgcaagaatagt	233463	-	-	-	-
17111	PUS1	NM_025215.3	534	atgtcgggtctctcaacaattcaaa	233472	-	-	pseudouridylate synthase	-
17112	TRUB1	NM_139189.3	901	gggacatttaactagagaagac	233500	-	-	-	-
17113	ECH1	NM_001398.1	208	acgtctgcgcagaaaactgttct	233509	-	-	isomerase	-
17114	ECHS1	NM_004092.2	555	cagccggagatcttaataaggaac	233522	-	-	see also 2760 line	-
17115	UROS	NM_000375.1	832	tggtgacaatatcgatcaaaatta	233537	-	-	uroporphyrinogen -III synthase	-
17116	ALAD	NM_000031.3	731	atgagctacagtgccaaaattgac	233541	-	-	porphobilinogen synthase	porphyria(ポルフィリン症)、diabetes(糖尿病)
17117	FH	NM_000143.2	720	aagattggagcgtactcatactca	233567	-	-	see also 128 line	-
17118	CBS	NM_000071.1	1093	agggatcggctacgacattcattcc	233582	-	-	see also 45 line	-
17119	TGDS	NM_014305.1	625	cagttctacttgggaacaataataa	233602	-	-	-	-
17120	GMDS	NM_001500.1	465	tggcactctacgacttcttagatg	233624	-	-	see also 1030 line	-
17121	FLJ31300	NM_144639.1	1311	gagttcgcgtacccttctctatgt	233666	-	-	urocanate	-
17122	PTS	NM_000317.1	130	ggcgcagccacagattgtacagt	233671	-	-	magnesium binding	hyperphenylalaninemia(高フェニルアラニン血症)
17123	ODC-p	NM_052998.2	1550	ggcggtgatgggacttctcaact	233698	-	-	-	-
17124	ODC1	NM_002539.1	1535	cagagccgcgacgatctactatgt	233735	-	-	translation	esophageal cancer(食道癌)
17125	GAD1	NM_000817.1	1118	cagctctcacttggattggatat	233749	-	-	see also 515 line	-
17126	GAD2	NM_000818.1	1678	ttgggtactcttgggaagacaatga	233816	-	-	see also 516 line	-
17127	UROD	NM_000374.2	790	atgatcatctttgtctaaggatgg	233828	-	-	uroporphyrinogen decarboxylase	porphyria cutanea tarda(晩発性反荷ポルフィリン 症)、diabetes(糖尿病)、porphyria(ポルフィリン 症)、porphyria hepatoerythropoietic(肝造血性ポ ルフィリン症)
17128	HDC	NM_002112.1	1200	tccggtcttcggggtgaagaatc	233836	-	-	see also 1361 line	-
17129	DDC	NM_000790.1	1250	aggatccccgctttgaaatctgt	233858	-	-	aromatic-L-amino acid decarboxylase	-
17130	AMD1	NM_001634.3	623	cagtggtttgactcaaatcaaa	233870	-	-	adenosylmethionin e decarboxylase	-
17131	KIAA0251	NM_015027.1	1640	caggtatgaacatgctaataatg	233885	-	-	-	-
17132	SGPL1	NM_003901.2	1687	cggaaacgagtagatatacaatt	233937	-	-	see also 2657 line	-
17133	ALDOA	NM_000034.2	1975	ctgcgcaggaggagtagtatgtcaag	233944	-	-	USF43/USF44 complex	anemia hemolytic(溶血性貧血)



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17134	ALDOB	NM_000035.2	688	tggactggtacctattgtgaac	233950	-	-	fructose- biphosphate aldolase	fructosemia(果糖血症)
17135	ALDOC	NM_005165.1	640	gagaccacgaacctcaaacgttgt	233968	-	-	fructose- biphosphate aldolase	-
17136	CGI-26	NM_015954.1	917	aagccagaactctttcgatagg	233996	-	see also 6588 line	-	-
17137	HMGCL	NM_000191.1	481	cagcgagtcagccaattattct	234037	-	see also 158 line	-	-
17138	GUCY1A2	NM_000855.1	2273	gggtgcgaatgcacattattgc	234073	-	-	receptor guanylate cyclase	-
17139	GUCY1A3	NM_000856.1	714	cagtcggagccgagtcctatcttc	234082	-	receptor activity, signal transduction	receptor guanylate cyclase	-
17140	GUCY1B2	NM_004129.1	1087	aagtcggactacactcaaaccttc	234141	-	see also 2786 line	-	-
17141	GUCY1B3	NM_000857.1	1211	aggctacagctcacgtaagagc	234196	-	see also 560 line	-	-
17142	SAC	NM_018417.2	881	gtgtacgaacttcacgcatatt	234230	-	-	-	-
17143	CGI-150	NM_016080.2	506	ttgaactactggtgtaactact	234347	-	-	-	-
17144	GLO1	NM_006708.1	455	gagattcgggtcatattggaatt	234369	-	-	lactoylglutathione lyase	-
17145	HCCS	NM_005333.1	826	taggcacagattggatcataaacc	234383	-	-	holocytochrome c synthase	-
17146	CTH	NM_001902.4	808	atgggctgtgtctgttaattg	234417	-	-	-	cystathioninuria(システチオニン尿症)
17147	SDS	NM_006843.2	937	cagccctggccgctgtctatagc	234442	-	-	L-serine ammonia- lyase	-
17148	ASL	NM_000048.2	1107	tggccactggcgctcatctctacg	234452	-	-	argininosuccinate lyase	argininosuccinicaciduria(アルギニコハク酸尿 症)
17149	ADSL	NM_000026.1	1087	tggctgtaccaccaaaagtatt	234473	-	see also 2 line	-	-
17150	C20orf3	NM_020531.1	329	ccgaggtccatagcacatattgg	234485	-	-	-	-
17151	FLJ10916	NM_018271.2	381	ctgtgacatgctgcacatatgc	234489	-	-	-	-
17152	LSS	NM_002340.2	316	gggcaactggacgggtgattatg	234508	-	-	lyase	-
17153	SDS-RS1	NM_138432.2	631	cgtttgaccaccctcaatgatg	234536	-	-	-	-
17154	SRR	NM_021947.1	430	acgagcgtcaattgtatactgt	234548	-	see also 8210 line	-	-
17155	FBXO18	NM_032807.3	2128	atgacggtactgaaactctgg	234600	-	see also 9288 line	-	-
17156	LOC15067	NM_138336.1	452	ggcgaggagcgctaatgtttacc	234626	-	-	-	-
17157	PEO1	NM_021830.3	1843	cagacctcaatgctatctgaag	234663	-	see also 8181 line	-	-
17158	FKBP11	NM_016594.1	391	gagaagcgaaggcgcaatcattcc	234673	-	-	-	-
17159	KIAA0073	NM_015342.1	1742	tggctaacgcgggatcaaatct	234722	-	see also 6383 line	-	-
17160	PIN4	NM_006223.2	78	gagcggttcagcggttcaacaaca	234733	-	-	cyclophilin-type peptidyl-prolyl cis- trans isomerase	-
17161	PPIB	NM_000942.3	410	cagcaaatccatctgtgtaatca	234739	-	-	cyclophilin-type peptidyl-prolyl cis- trans isomerase	-

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17162	PPIF	NM_005729.2	324	gagaagggtcttggtctacaagg	234740	-	-	cyclophilin-type peptidyl-prolyl cis- trans isomerase	-
17163	PPIL1	NM_016059.3	346	tgcctctgctgggttactacaat	234745	-	-	cyclophilin-type peptidyl-prolyl cis- trans isomerase	-
17164	PPIL2	NM_014337.2	1127	aggcacgggtgggagtcatact	234773	-	-	-	-
17165	PPIL3	NM_032472.3	498	atgttaggggtgtgtatctatg	234778	-	-	-	-
17166	SDCCAG1	NM_005869.1	602	atgttgctgactgtcagaagtaga	234800	-	-	-	-
17167	EBP	NM_006579.1	351	gggctggttcttctctactag	234818	-	receptor_activity	transmembrane receptor	-
17168	DCI	NM_001919.1	273	aagagcttcgggggttcattct	234824	-	-	dodecenoyl-CoA delta-isomerase	-
17169	JPH2	NM_020433.3	1173	aagcagcgggtgccaagtatagg	234828	-	-	-	-
17170	RPIA	NM_144563.1	715	gggctggttggaacttcgaatgg	234869	-	-	ribose-5- phosphate	-
17171	PGDS	NM_014485.1	117	aagctgactggcctgaaatcaaa	234881	-	signal_transduction	prostaglandin-D synthase	-
17172	PTGIS	NM_000961.2	986	ggagctcgagagtatcttgg	234899	-	-	human cytochromes P450 phosphomannomut ase	-
17173	PMM1	NM_002676.1	244	cgaggacgggtcagataagcacg	234912	-	-	phosphomannomut ase	-
17174	PMM2	NM_000303.1	180	aggcggatcgacttgagaaag	234919	-	-	phosphomannomut ase	-
17175	PGM3	NM_015599.1	1036	aagttcaacacaggtatattgaag	234975	-	see also 6499 line	-	carbohydrate-deficient glycoprotein syndrome (-)
17176	FLJ32029	NM_173582.2	1053	tgggctcgacatgactatgtgc	235012	-	-	-	-
17177	PGM2	NM_018290.1	635	tgggacgattcttaattgatag	235049	-	-	-	-
17178	PGM5	NM_021965.2	1542	tgatccaaagacacacatttat	235091	-	-	structural molecule	-
17179	MUT	NM_000255.1	921	cagatggattgggagttactaga	235126	-	see also 199 line	-	-
17180	GALE	NM_000403.2	165	tggctatcgataacttcataat	235169	-	-	UDP-glucose 4- epimerase	galactosemia(ガラクトース血症)
17181	MCEE	NM_032601.2	386	gggtggataataattatgcagc	235189	-	-	-	-
17182	SYNA1	NM_016388.3	1231	gcgctggatgagatatacctcg	235196	-	-	-	-
17183	EBRP	NM_032565.1	249	tagtaggaacacgttgcaattcc	235201	-	-	isomerase	-
17184	RENBP	NM_002910.4	549	aggtagcagcgaacacattcagt	235206	-	-	isomerase	-
17185	TOPORS	NM_005802.2	649	atgtcctaaggccttcgtataat	235224	-	see also 4046 line	-	-
17186	TXNDC5	NM_022085.2	1291	aggtagcccccaggtattgcttt	235327	-	-	-	-
17187	IOIF6	NM_007022.3	349	tggcacccgggtgctatgcttt	235330	-	-	-	-
17188	BRE	NM_004899.3	955	aaggtgacgtacatgattcaagg	235360	-	see also 3403 line	-	-
17189	HSPC155	NM_016406.1	487	gagtttgacattcctatcacata	235379	-	-	-	-
17190	NEDD8	NM_006156.1	130	aaggagattgagatgacattga	235385	-	-	ubiquitin conjugating	-
17191	UBE1G	NM_003568.3	1266	cagtcggttaacctctattgaaga	235433	-	see also 2703 line	-	-
17192	UBE4A	NM_004788.2	2382	ccgcgcgtcccatgctatcctacc	235515	-	see also 3309 line	-	-

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17193	SAE1	NM_005500.1	296	ctgggtctgttgccgaatagg	235544	-	-	-
17194	APG7L	NM_006395.1	1846	cagtgacgatgatgaatgagc	235609	-	-	-
17195	UBA2	NM_005499.1	384	ctgccegaaccatgtaataga	235631	-	see also 3839 line	-
17196	ABHD2	NM_007011.4	755	acgtgatcgcgggtgtttgaac	235698	-	-	-
17197	ABHD3	NM_138340.3	1007	gagttgataagcgattcaattc	235748	-	see also 9602 line	-
17198	ACP33	NM_016630.2	850	ttgatcagatgcgctttcaact	235777	-	-	-
17199	APPBP1	NM_003905.2	1349	atgtaccaggctgtgatagatt	235816	-	see also 2661 line	-
17200	BAT5	NM_021160.1	1126	atgtctaccagatgttagtgc	235835	-	see also 8113 line	-
17201	BG1	NM_015162.3	641	ctgccagatcatcgcttatgact	235845	-	-	-
17202	BGR	NM_030924.2	548	gcgtttccacggagtggtatcc	235871	-	-	-
17203	BUGS1	NM_052956.1	1173	cagtcggaacaggagactaattg	235930	-	-	-
17204	C12orf5	NM_020375.1	90	ttgtccggcatgggagaacaaga	235935	-	-	-
17205	C20orf135	NM_080622.1	29	tgttgccgctgttcaagatctac	235952	-	-	-
17206	C20orf22	NM_015600.2	442	aagattccctatttcattgatt	235961	-	see also 6501 line	-
17207	C21orf106	NM_015151.1	2153	ctgtcagatgaacggcttaagtta	236006	-	-	-
17208	C5orf4	NM_016348.1	1297	tcggccacacgcgcctaatgatgg	236028	-	-	-
17209	CGI-111	NM_016048.1	428	tagcgtggagacagagattgtgc	236046	-	-	Alzheimer disease(アルツハイマー病)
17210	CGI-67	NM_016014.1	635	aggactagatcacaggattaat	236070	-	see also 6615 line	-
17211	CTMP	NM_053055.2	262	tggaaacgtttgcoctcatataa	236084	-	-	-
	DKFZP566					-	-	-
17212	J2046	NM_031208.1	586	aaggaggttgaccgggttaaaga	236098	-	-	-
17213	ECHDC1	NM_018479.1	491	aggtgttatgatgtctacaacttc	236109	-	-	-
17214	ECHDC3	NM_024693.2	547	gtgattaccatgccgaagtattt	236134	-	-	-
17215	FA2H	NM_024306.2	988	gggtctacgtctctctatgacatga	236143	-	-	-
17216	FHL5	NM_020482.3	796	gagaattgccgacaacctatagg	236158	-	hydrolase	-
17217	FLJ10948	NM_018281.1	807	gagaagcggactcccaaatgtgt	236179	-	-	-
17218	FLJ12377	NM_024989.1	1136	ctgacttaaacaggagacatctatg	236229	-	-	-
17219	FLJ14906	NM_032859.1	422	ccgatgcgttaccttcocttatg	236266	-	-	-
17220	FLJ20581	NM_017888.2	556	cggacagggagactgtgatgtcc	236281	-	-	-
17221	FLJ20920	NM_025149.2	422	ggggacctaaactctatgcatgg	236288	-	-	-
17222	FLJ21820	NM_021925.1	581	ttgtgctggtttcgatatgtct	236322	-	-	-
17223	FLJ21963	NM_024560.2	620	atgatccacaggcgatgatatac	236355	-	see also 8643 line	-
17224	FLJ25449	NM_144714.1	447	tggccacgcctgggtttccaatgg	236405	-	-	-
17225	FLJ32332	NM_144641.1	639	ttgtgtgcggagagatgagatac	236426	-	phosphatase	-
17226	FLJ37964	NM_182578.1	667	gagggcctgtttcacactaagtct	236431	-	-	-
17227	FLJ40125	NM_178494.2	558	gagcgttggggcgactttacac	236436	-	-	-
17228	FLJ40773	NM_152666.1	1628	ctggcacgggcctgtttatcaac	236484	-	-	-
17229	GAF1	NM_015470.1	2012	tggaccagtcggccaagtactac	236494	-	-	-
17230	GENX-	NM_003943.1	1116	gagttaccgcctgggaagaatgc	236512	-	-	-
17231	GPHN	NM_020806.3	154	ttgttgggtgggactatcatcagc	236522	-	see also 7978 line	-
						-	gpcr, receptor_activity, signal_transduction	-
17232	GPR56	NM_005682.3	1255	gtgagacgcgtcaggagagaacc	236577	-	-	melanoma(メラノーマ)

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17233	HSRTSBE	NM_017512.1	854	gtgccacaatagatgatattta	236592	-	-	-
17234	TA	NM_020849.1	736	caggcgcgatgagcattcatca	236610	-	see also 7993 line	-
17235	KIAA1463	NM_032873.2	1601	tgggttttccgagattacgaga	236675	-	see also 9329 line	-
17236	KIAA1959	NM_139248.1	190	gtggttttcacggagactaaatgt	236692	-	-	-
17237	LIPH	NM_138790.1	1339	tctgtccggtggggaaccattcc	236730	-	-	-
17238	LOC12261	NM_174917.1	1784	ttggagttccggatagacatgg	236743	-	-	-
17239	LOC19732	NM_138779.2	762	aggacggtacacaaatgatgttt	236763	-	-	-
17240	LOC93081	NM_138799.1	193	cagctctccagatcatatact	236769	-	-	-
17241	LYPLAL1	NM_138794.1	193	cagctctccagatcatatact	236804	-	channel	-
17242	MGOLN1	NM_020533.1	868	atgagatcccgagactgctatacc	236815	-	-	mucoilipidosis(ムコリビドーシス)
17243	MGC15429	NM_032750.1	723	aagactccagctctgattgtata	236829	-	see also 3635 line	-
17244	MGC19531	NM_005167.4	2222	ctggcgtctcccaacacaagc	236832	-	-	-
17245	MGC5352	NM_138575.1	431	tggcaagcttggggtgaagttt	236849	-	-	-
17246	MGC52	NM_004531.3	863	ctgtgagctatgcatgtatact	236859	-	enzyme	breast cancer(乳癌)
17247	NDRG1	NM_006096.2	243	caggacatcgagactttacatgg	236867	-	see also 8401 line	-
17248	NDRG3	NM_022477.2	163	tgggtgagtcacgctactataa	236970	-	see also 6548 line	-
17249	OAZIN	NM_015878.3	1428	aggattcaagggaactgaatttc	236999	-	-	-
17250	PGS1	NM_024419.2	1425	acgtgattggctctcttaattt	237037	-	-	-
17251	PIGB	NM_004855.3	1442	ttgttcctgcccttatactgg	237101	-	see also 10309 line	-
17252	PLEKHE1	NM_194449.1	1613	ctgaagcctctggagacaact	237135	-	see also 6695 line	-
17253	PME-1	NM_016147.1	379	ggtttcaaggcagcgattatag	237164	-	-	-
17254	PNPLA1	NM_173676.1	599	tgggtgactctgcaogattactac	237189	-	see also 9682 line	-
17255	PPM1L	NM_139245.1	713	aagaagcagctgattcatcaag	237214	-	see also 3901 line	-
17256	SAH	NM_005622.1	678	tagacgtgttgatccaaatgt	237291	-	-	-
17257	SERAC1	NM_032861.2	2011	cagcgtactttacattatctcg	237299	-	-	-
17258	SLC27A3	NM_024330.1	1332	gggagctgtgccgataccttgt	237324	-	-	-
17259	SLC27A4	NM_005094.2	2096	ggcctttgacccggctatgtga	237330	-	see also 9687 line	-
17260	TA-PP2C	NM_139283.1	520	atgcgagcgtgtgacgtttagt	237398	-	see also 9686 line	-
17261	TA-WDRP	NM_139281.1	1748	gtgtgcagctggatggattaaac	237435	-	-	-
17262	TTS-2.2	NM_020376.2	567	cagacggcagaaatgtcattata	237452	-	enzyme	-
17263	UBASH3A	NM_018961.1	1348	acggagctgtgggatacaagact	237492	-	see also 10065 line	-
17264	UPP2	NM_173355.2	1036	tgcactgtgacagatacaacttg	237498	-	-	-
17265	UXS1	NM_025076.1	905	tggggccacgtgaatccaatagg	237510	-	receptor_activity、 gpcr	alcoholism(アルコール依存症)
17266	HTR1B	NM_000863.1	55	tgggttctcaagccaactatc	237531	-	receptor_activity、 gpcr	-
17267	HTR1D	NM_000864.3	1366	ctggaaacgaagaggattctgc	237535	-	receptor_activity、 gpcr	-
17268	HTR1E	NM_000865.1	733	ctggcaactaactaatgtgtct	237587	-	see also 561 line	-
17269	HTR1F	NM_000866.1	995	tggcgtgcttgggtatctcaat	237615	-	receptor_activity、 gpcr、 signal_transduction	schizophrenia(精神分裂病)、alcoholism(アルコール依存症)、Alzheimer disease(アルツハイマー病)
17270	HTR2A	NM_000621.1	823	ttgttacttcgcccagatgaact	237655	-	see also 563 line	-
17271	HTR2C	NM_000868.1	1348	gcgtgctcaacgaccacaatttc		-		

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17271	HTR4	NM_000870.2	575	ctgggtcatccccacgctttattt	237692	-	see also 565 line	receptor_activity, gpcr,			
17272	HTR5A	NM_024012.1	333	gaggctgtgccagctttggatcg	237710	-	receptor_activity, signal_transduction		serotonin receptor	-	
17273	HTR7	NM_000872.3	953	tggctatacagattactactacc	237719	-	gpcr			-	
17274	ADRA2A	NM_000681.2	2086	gtgccacgcacgcctcttoaaatt	237728	-	gpcr, receptor_activity, kinase_related, signal_transduction		potassium channel regulator	-	
17275	ADRA2B	NM_000682.3	1039	agggggcgtgggtgctataggtgg	237734	-	gpcr, receptor_activity, signal_transduction		alpha2-adrenergic receptor	-	
17276	ADRA1A	NM_000680.1	489	cggcacccgtgaacattccaag	237736	-	gpcr, receptor_activity, apoptosis, signal_transduction ,kinase_related		alpha1-adrenergic receptor	-	
17277	ADRA1B	NM_000679.2	1059	gggcattgtggtcggatatttca	237756	-	see also 426 line				
17278	ADRA1D	NM_000678.2	1266	ctgttcacgcgcgagttcaagc	237762	-	gpcr, receptor_activity, signal_transduction		alpha1-adrenergic receptor	-	
17279	ADRB2	NM_000024.3	1426	gggaggaattgtatgatacaatga	237779	-	receptor_activity, gpcr, kinase_related,		translation regulator		obesity(肥満)
17280	HRH1	NM_000861.2	1364	tgcattcaagacagtagtatgc	237799	-	receptor_activity, gpcr		histamine receptor	-	
17281	HRH2	NM_022304.1	672	ccgcaacctgacccaattgttca	237804	-	receptor_activity, gpcr		histamine receptor	-	
17282	HRH3	NM_007232.1	859	ctgctatgccgagttcttctaca	237815	-	receptor_activity, gpcr		histamine receptor	-	
17283	HRH4	NM_021624.2	657	cagtcattcttagtcgcttatttc	237840	-	receptor_activity, gpcr, signal_transduction		histamine receptor	-	
17284	HTR6	NM_000871.1	638	gcgcaacacgtcccaactcttcc	237851	-	receptor_activity, gpcr		histamine receptor	-	
17285	DRD1	NM_000794.2	1783	tagagacggtgagtatcaataac	237878	-	gpcr, receptor_activity, signal_transduction		Transcription factor AP-2 alpha		schizophrenia(精神分裂病)
17286	DRD2	NM_000795.2	1295	ttgttctcggcggtgttcattcatc	237896	-	see also 490 line				
17287	DRD3	NM_000796.2	626	gtgtacagccagcatccttaatc	237900	-	see also 491 line				
17288	DRD5	NM_000798.3	87	ggggcagttcgtctctataccagc	237914	-	receptor_activity, gpcr, signal_transduction		dopamine receptor		blepharospasm(眼瞼痙攣)、schizophrenia(精神分裂病)

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17289	OR1A1	NM_014565.1	310	atgatagccttgggtaacacaga	237921	-	receptor_activity, signal_transduction , gpcr	olfactory receptor	-
17290	OR1A2	NM_012352.1	835	gtgaccccagcattaaatccttt	237944	-	receptor_activity, signal_transduction , gpcr	olfactory receptor	-
17291	OR1D2	NM_002548.1	755	atggacaccttggatgtatc	237955	-	receptor_activity, signal_transduction , gpcr	olfactory receptor	-
17292	OR1D5	NM_014566.1	564	atgttccaaacaccacatcattc	331771	-	-	olfactory receptor	-
17293	OR1G1	NM_003555.1	286	gggtgtctactacagttgtattt	237969	-	receptor_activity, signal_transduction , gpcr	olfactory receptor	-
17294	OR2C1	NM_012368.1	697	gggagcgaaaggcggttcaatac	237983	-	receptor_activity, signal_transduction , gpcr	olfactory receptor	-
17295	OR3A1	NM_002550.1	231	cagcgtcactgttccatcaatgt	237986	-	receptor_activity, signal_transduction , gpcr	olfactory receptor	-
17296	OR51B4	NM_033179.1	555	ctgtctgatatacagtttaatac	238003	-	receptor_activity, signal_transduction , gpcr	olfactory receptor	-
17297	OR51E2	NM_030774.2	858	tgggcgtggacgtaaatgttcac	238021	-	receptor_activity, signal_transduction , gpcr	olfactory receptor	-
17298	OR7A5	NM_017506.1	426	ttgctgacatttgtttacttcc	238028	-	receptor_activity, signal_transduction , gpcr	olfactory receptor	-
17299	OR7C1	NM_198944.1	53	cagcaacgtcagagattcagttc	238033	-	-	-	-
17300	OR8B8	NM_012378.1	504	ctgtgccataaaccttgtcaacc	238048	-	receptor_activity, signal_transduction , gpcr	olfactory receptor	-
17301	TAS2R1	NM_019599.1	391	ctggggtctctgtctatgtatc	238063	-	receptor_activity, gpcr, signal_transduction	-	-
17302	TAS2R10	NM_023921.1	379	atggttcttcccttcattgatgt	238093	-	receptor_activity, gpcr, signal_transduction	-	-
17303	TAS2R13	NM_023920.1	128	cagtcgataaactcctcattatc	238118	-	receptor_activity, gpcr, signal_transduction	-	-
17304	TAS2R14	NM_023922.1	404	tttgtacttcggtctctctgtttt	238147	-	receptor_activity, gpcr, signal_transduction	-	-

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17305	TAS2R16	NM_016945.1	288	cagcttgcttaccgtgtcttact	238164	-	receptor_activity、 gpcr、 signal_transduction	-	-
17306	TAS2R3	NM_016943.1	374	gagtttctagggtgatgtatgg	238191	-	receptor_activity、 gpcr、 signal_transduction	-	-
17307	TAS2R4	NM_016944.1	478	gtgactacgagaaataacacatc	238211	-	receptor_activity、 gpcr、 signal_transduction	-	-
17308	TAS2R5	NM_018980.1	228	ttggcttcgtctatcttagtatct	238229	-	receptor_activity、 gpcr、 signal_transduction	-	-
17309	TAS2R7	NM_023919.1	175	ttgtgcgaataactatttagattg	238253	-	receptor_activity、 gpcr、 signal_transduction	-	-
17310	TAS2R8	NM_023918.1	168	ttgtttgatcagtgtaatgggttg	238274	-	receptor_activity、 gpcr、 signal_transduction	-	-
17311	TAS2R9	NM_023917.1	227	atggcaatagcgtgctagtaagc	238305	-	receptor_activity、 gpcr、 signal_transduction	-	-
17312	ELOVL4	NM_022726.2	248	ccgggtagtgctctaacaagtagt	238320	-	gpcr、 receptor_activity、 photoreceptor	-	-
17313	OPN1SW	NM_001708.1	306	tcgtcttggtcgccatgtttgt	238367	-	receptor_activity、 gpcr、 signal_transduction	opsin	color blindness tritanopic(第3色盲)
17314	OPN3	NM_014322.1	945	ttgctaaatcgaaacactgtatcc	238391	-	receptor_activity、 gpcr、 signal_transduction	G-protein coupled photoreceptor	-
17315	OPN4	NM_033282.1	401	gggcaacctgacaggctcatctata	238396	-	receptor_activity、 gpcr、 signal_transduction	G-protein coupled photoreceptor	-
17316	RDS	NM_000322.2	532	aagccgtacctggctctatctgtgt	238407	-	gpcr、 receptor_activity	G-protein coupled photoreceptor	retinal degeneration(網膜変性)、retinitis pigmentosa(色素性網膜炎)
17317	RHO	NM_000539.2	898	acgccagcgtggcattctacatc	238427	-	see also 406 line	-	-
17318	ROM1	NM_000327.2	389	aagtctgaatgcagctctctatcc	238430	-	gpcr、 receptor_activity	G-protein coupled photoreceptor	retinal degeneration(網膜変性)
17319	PTGER1	NM_000955.2	1006	gggccagcttgctggatcatcgtg	238443	-	gpcr、 receptor_activity、 signal_transduction	prostaglandin E receptor	-
17320	PTGER2	NM_000956.2	156	tgggcaatgcctccaatgactcc	238444	-	receptor_activity、 gpcr、 signal_transduction	thromboxane receptor	-

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17321	PTGER3	NM_000957.2	720	ctgtatgctgagccacatgaaga	238454	gpcr, receptor_activity, transcription_regulation	prostaglandin E receptor	-
17322	PTGER4	NM_000958.2	1885	gaggactttgcgaatatacagaga	238487	gpcr, receptor_activity, signal_transduction	prostaglandin E receptor	-
17323	PTGFR	NM_000959.2	651	atggccattgagcgggtgtattgg	238503	gpcr, receptor_activity, signal_transduction	thromboxane receptor	-
17324	PTGDR	NM_000953.2	930	gtgttctctgccgtaattatc	238532	gpcr, receptor_activity, signal_transduction	thromboxane receptor	-
17325	TBXA2R	NM_001060.2	446	tgggctgtctcatgatcttcttc	238539	gpcr, receptor_activity, signal_transduction	Smad3/Sp-1 heterodimer	bleeding disorder(出血性疾患)
17326	EDG1	NM_001400.2	293	ctgactactgcaactatgatc	238541	gpcr, receptor_activity, signal_transduction	lysosphingolipid and	-
17327	EDG2	NM_001401.2	861	ctggactatgccatcggtatgg	238565	gpcr, receptor_activity, signal_transduction	lysosphosphatidic	-
17328	EDG4	NM_004720.3	441	ccgcgtgctcatgctctattgtg	238576	gpcr, receptor_activity, signal_transduction	-	-
17329	TSHR	NM_000369.1	1326	aagacataatgggtctacaagtc	238619	gpcr, receptor_activity	thyroid-stimulating hormone receptor	TSH resistance(甲状腺刺激ホルモン不応症)
17330	GNRHR	NM_000406.1	2257	ttgcaggaccacaggtatacatc	238654	-	gonadotropin-releasing hormone receptor	Hypogonadotropic hypogonadism(低ゴナドトロピン性機能低下症)
17331	FSHR	NM_000145.2	1219	tagtgctagtgcctactacc	238708	gpcr, receptor_activity, signal_transduction	-	ovarian dysgenesis(卵巣発育不全), ovarian sex cord tumors(卵性索腫瘍), premature ovarian failure(早発閉経), ovarian hyperstimulation syndrome(卵巣過剰刺激症候群)
17332	GPR24	NM_005297.2	519	gggagacatctctacatcaaca	238723	gpcr, receptor_activity, signal_transduction	neuropeptide receptor	-
17333	GPR105	NM_014879.1	901	aagaaatctagccgaacatatt	238741	gpcr, receptor_activity, signal_transduction	UDP-activated nucleotide receptor	-
17334	P2RY4	NM_002565.2	820	ctggctactctgtttgtatgg	238764	gpcr, receptor_activity	uridine nucleotide receptor	-
17335	GPR86	NM_023914.2	221	cagagacactcggatagtagcagc	238770	-	-	-
17336	GPR87	NM_023915.2	1396	aagatcggaagtcgcgatatt	238831	gpcr, receptor_activity, signal_transduction	-	-



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17337	P2RY12	NM_022788.3	587	ctgggactgataactatcatcg	238842	-	gpcr, receptor_activity, signal_transduction	-	-
17338	GPR135	NM_022571.3	1275	aagccgcagtcgccttgaacc	238869	-	gpcr, receptor_activity, signal_transduction	-	-
17339	PTAFR	NM_000952.2	416	cagtaactcggcccatcaagact	238880	-	receptor_activity, signal_transduction	platelet activating factor receptor	-
17340	CYSLTR1	NM_006639.2	1340	ttgtccagcgtgaacttatgtacc	238929	-	see also 4687 line	-	-
17341	CYSLTR2	NM_020377.2	283	agggctgactattatcttagagg	238940	-	see also 7856 line	-	-
17342	CNR1	NM_016083.3	831	ctgcgagaaactgcaatctgttt	238968	-	see also 6654 line	-	-
17343	CNR2	NM_001841.1	1171	tggccagattccagagatctaga	238981	-	receptor_activity, gpcr	cannabinoid receptor	-
17344	MTNR1A	NM_005958.2	1055	acgtggccgatagggttaaatgg	238998	-	receptor_activity, gpcr	melatonin receptor	Alzheimer disease(アルツハイマー病)
17345	MTNR1B	NM_005959.2	647	gagtacgacccagcactatcttc	239007	-	see also 4166 line	-	-
17346	TRHR	NM_003301.1	523	tagcacctacaaagatgctattg	239030	-	see also 2232 line	-	-
17347	ADMR	NM_007264.2	975	tgttcacactgctctactcttc	239054	-	gpcr, receptor_activity, signal_transduction	rhodopsin-like receptor	-
17348	ADORA1	NM_000674.1	1067	cggcgaccccgagagagactatg	239057	-	gpcr, receptor_activity, signal_transduction	A1 adenosine receptor, G-protein coupled	-
17349	ADORA2A	NM_000675.3	1102	tgtctctctccacacccaattgg	239065	-	receptor_activity, gpcr, apoptosis, signal_transduction	A2A adenosine receptor, G-protein coupled	Parkinson disease(パーキンソン病)
17350	ADORA2B	NM_000676.2	1164	ctgtcacatgccaaattcagtgt	239078	-	gpcr, receptor_activity, kinase related, signal_transduction	A2B adenosine receptor, G-protein coupled	-
17351	ADORA3	NM_000677.2	1346	gtgcgccatctatcttgacatct	239091	-	gpcr, receptor_activity, signal_transduction	A3 adenosine receptor, G-protein coupled	-
17352	AGTRL1	NM_005161.2	490	gaggcgctcagctgatatctcca	239102	-	gpcr, signal_transduction	rhodopsin-like receptor	Alzheimer disease(アルツハイマー病)
17353	BLR1	NM_001716.2	150	cagattggacaactataacgaca	239111	-	gpcr, receptor_activity, signal_transduction	-	-
17354	CMKOR1	NM_020311.1	381	atgacacgcactgtacatcttg	239117	-	see also 7831 line	-	-

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17355	CXCR6	NM_006564.1	950	ttgtcagcctgaagtctcgaag	239142	-	receptor_activity, gpcr, signal_transduction	-	-
17356	EBI2	NM_004951.2	1005	acggcaagtccagtgtatcgattt	239200	-	gpcr, receptor_activity, signal_transduction	purinergic nucleotide receptor, G- protein coupled	-
17357	ET(B)R- LP-2	NM_004767.2	362	aggaaactgaggaggaactcgaca	239204	-	gpcr, receptor_activity, signal_transduction	rhodopsin-like receptor	-
17358	FKSG79	NM_032553.1	743	caggggatctcttaattgcttt	239239	-	gpcr, receptor_activity, signal_transduction	purinergic nucleotide receptor, G- protein coupled	-
17359	FY	NM_002036.1	1075	gtggactctgcacccgtatatac	239260	-	gpcr, receptor_activity, signal_transduction	-	-
17360	GHSR	NM_004122.1	345	ctgcaaaactcttccaattgtcga	239265	-	gpcr, receptor_activity, signal_transduction	rhodopsin-like receptor	-
17361	GNRHR2	NM_057163.1	72	tgggagtgccacactggaatca	239272	-	gpcr, receptor_activity, signal_transduction	-	-
17362	GPR	NM_007223.1	1886	cgggtacagtcgcccgaatgtgg	239308	-	receptor_activity, gpcr, signal_transduction	-	-
17363	GPR1	NM_005279.2	676	ctgtggaggttcaataatcatact	239328	-	gpcr, receptor_activity, signal_transduction	rhodopsin-like receptor	-
17364	GPR100	NM_181885.1	83	atgctccgagtcctgtcaaatc	239341	-	gpcr, receptor_activity, signal_transduction	-	-
17365	GPR101	NM_054021.1	99	cggctcaaccgctgctgttatct	239349	-	gpcr, receptor_activity, signal_transduction	-	-
17366	GPR102	NM_053278.1	808	tggttaccgtatcacagtgtatat	239385	-	gpcr, receptor_activity, signal_transduction	-	-
17367	GPR119	NM_178471.1	646	cggactcccagcagactcaaacgc	239396	-	gpcr, receptor_activity, signal_transduction	-	-
17368	GPR12	NM_005288.1	713	tggccacgctcgactatgtgacc	239408	-	gpcr, receptor_activity, signal_transduction	-	-
17369	GPR120	NM_181745.1	557	cggaccagggaatttcgatttgc	239410	-	gpcr, receptor_activity, signal_transduction	-	-
							see also 3704 line		
							see also 10252 line		

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17370	GPR132	NM_013345.2	1481	caggattgccgggtactactacg	239419	-	gpcr, receptor_activity, signal_transduction	-	atherosclerosis(粥状硬化症)
17371	GPR145	NM_032503.1	683	ctgaacgatgtactcttggtatata	239437	-	gpcr, receptor_activity, signal_transduction	-	-
17372	GPR146	NM_138445.1	755	ctggacgccacactatctgatcc	239458	-	gpcr, signal_transduction	-	-
17373	GPR15	NM_005290.1	805	ttgcggcaagaacactatttacc	239482	-	gpcr, receptor_activity, signal_transduction	purinergic nucleotide receptor, G-protein coupled	-
17374	GPR151	NM_194251.1	398	aagtgagtatccacactacacc	239495	-	see also 10305 line	-	-
17375	GPR160	NM_014373.1	941	tggtacaggctatcaggataaact	239524	-	gpcr, receptor_activity, signal_transduction	-	-
17376	GPR161	NM_007369.1	1086	cgggtattatcgggaaccatttg	239551	-	gpcr, receptor_activity, signal_transduction	-	-
17377	GPR18	NM_005292.2	1397	ctggtagtctacggctcactaagc	239596	-	gpcr, receptor_activity, signal_transduction	purinergic nucleotide receptor, G-protein coupled	-
17378	GPR19	NM_006143.1	1227	ttgcttggcccaacttaactcaaat	239631	-	gpcr, receptor_activity, signal_transduction	rhodopsin-like receptor	-
17379	GPR22	NM_005295.1	88	atgtaccacactatctatatacc	239642	-	see also 3705 line	-	-
17380	GPR23	NM_005296.1	891	ggctcccaagctactactaatt	239708	-	see also 3710 line	-	-
17381	GPR26	NM_153442.1	912	cggcatccgaccccttggtagac	239721	-	gpcr, receptor_activity, signal_transduction	-	-
17382	GPR27	NM_018971.1	1103	gggacctgaaggcattggttta	239725	-	gpcr, receptor_activity, signal_transduction	C-C chemokine receptor	-
17383	GPR3	NM_005281.2	494	cggctacctttctgtacaaatg	239727	-	gpcr, receptor_activity, signal_transduction	rhodopsin-like receptor	-
17384	GPR30	NM_001505.1	1293	cggacgaggcctgcttctgtttc	239735	-	gpcr, receptor_activity, signal_transduction	purinergic nucleotide receptor, G-protein coupled	-

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17385	GPR32	NM_001506.1	947	acgtcttccttgccagagatttc	239739	gpcr、 receptor_activity、 signal_transduction	N-formyl peptide receptor	-
17386	GPR34	NM_005300.2	726	gtgattctactatgattatt	239770	see also 3711 line	-	-
17387	GPR35	NM_005301.2	1067	gagcaccggcgcacaaattcaact	239793	gpcr、 receptor_activity、 signal_transduction	rhodopsin-like receptor	-
17388	GPR37	NM_005302.2	1267	gggcacgaagggtggacaattgc	239805	see also 3712 line	-	-
17389	GPR38	NM_001507.1	971	cgggaagattcggcgatgatgtac	239850	gpcr、 receptor_activity、 signal_transduction	rhodopsin-like receptor	-
17390	GPR39	NM_001508.1	51	cagtcattgtcccgaggtttgagg	239854	gpcr、 receptor_activity、 signal_transduction	rhodopsin-like receptor	-
17391	GPR43	NM_005306.1	428	tcgtgatcatcgttcaataacttg	239870	gpcr、 receptor_activity、 signal_transduction	rhodopsin-like receptor	-
17392	GPR44	NM_004778.1	428	ctgcactctccatctcttctct	239874	gpcr、 receptor_activity、 signal_transduction	N-formyl peptide receptor	-
17393	GPR48	NM_018490.1	3259	ttggctcgtatgcttcaaatct	239969	receptor_activity、 signal_transduction	protein-hormone receptor	-
17394	GPR49	NM_003667.2	1242	tagcctccgatcgtcgaatttgg	239997	see also 2492 line	-	-
17395	GPR50	NM_004224.1	1005	gggcaccctatcatatttctcc	240053	receptor_activity、 signal_transduction 、gpcr	melatonin receptor	-
17396	GPR52	NM_005684.1	826	atgctgtggctccctatataat	240086	gpcr、 receptor_activity、 signal_transduction	rhodopsin-like receptor	-
17397	GPR54	NM_032551.2	126	ctggctcgtgccgtctctctcg	240090	receptor_activity、 signal_transduction	-	-
17398	GPR55	NM_005683.2	341	aagaacaggatggcccgattatgc	240094	gpcr、 signal_transduction	-	-
17399	GPR58	NM_014626.1	489	atgggggaccaccctgtttatgg	240122	gpcr、 receptor_activity、 signal_transduction	-	-
17400	GPR61	NM_031936.2	731	gtggagcgtactattactagt	240150	gpcr、 receptor_activity、 signal_transduction	rhodopsin-like receptor	-
17401	GPR62	NM_080865.2	1005	ctggccgtggcccaatttgcagc	240153	gpcr、 receptor_activity、 signal_transduction	rhodopsin-like receptor	-
17402	GPR63	NM_030784.1	617	ttgocctgtaactatttact	240174	see also 8947 line	-	-

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17403	GPR73	NM_138964.1	111	cagctacagcgcactatgatgc	240204	-	receptor_activity, gpcr, signal_transduction	-	-
17404	GPR73L1	NM_144773.2	198	ctgcggcatcggtaacttgtct	240212	-	receptor_activity, gpcr, signal_transduction	-	-
17405	GPR75	NM_006794.1	1007	gtgccatgccggctctgtatagg	240231	-	receptor_activity, gpcr, signal_transduction	-	-
17406	GPR78	NM_080819.2	1175	ctgcttggcccgctatgcatga	240253	-	gpcr, receptor_activity, signal_transduction	-	-
17407	GPR80	NM_080818.2	665	ttgctataccacgattatccaca	240280	-	gpcr, receptor_activity, signal_transduction	-	-
17408	GPR82	NM_080817.1	647	tagtactaacatcatactactct	240318	-	see also 9525 line	-	-
17409	GPR83	NM_016540.2	616	atgctatctgccagaaattattt	240346	-	receptor_activity, gpcr, signal_transduction	neuropeptide Y receptor	-
17410	GPR84	NM_020370.1	1212	cgcccaattccggccaagcatatg	240371	-	receptor_activity, gpcr, signal_transduction	-	-
17411	GPR85	NM_018970.3	1177	ttgtctacctcaagctgatatt	240388	-	see also 7615 line	-	-
17412	GPR88	NM_022049.1	1109	gggggtcagcgtgctcaacttc	240405	-	receptor_activity, gpcr, signal_transduction	-	-
17413	GPR91	NM_033050.1	390	cagcatagatcgatacttgataa	240414	-	gpcr, receptor_activity, signal_transduction	-	-
17414	GRCA	NM_014449.1	614	gagggccgagttgcaaaagttcg	240429	-	receptor_activity, gpcr, signal_transduction	-	-
17415	GREAT	NM_130806.2	355	tagtggatggcgaccatatttg	240442	-	see also 9550 line	-	-
17416	H963	NM_013308.2	1054	gtgtcgaaacctgtgctttgatcc	240525	-	gpcr, receptor_activity, signal_transduction	purinergic nucleotide receptor, G- protein coupled	-
17417	JCG1	NM_153445.1	633	gtgtgtoatagccatatoctaca	240540	-	receptor_activity, signal_transduction , gpcr	rhodopsin-like receptor	-
17418	JCG3	NM_153444.1	629	tagcgtctgtctacatctatct	240556	-	receptor_activity, signal_transduction , gpcr	rhodopsin-like receptor	-
17419	LGR6	NM_021636.1	2171	cgggtccatcataaactgtac	240580	-	-	-	-

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17420	LGR7	NM_021634.1	764	aaggaacacatcatcataattta	240607	-	gpcr, receptor_activity, signal_transduction	-	-	gonadotropin unresponsiveness(性腺刺激ホルモン無応答症)、Leydig cell hypoplasia(ライディヒ細胞形成不全)、micropenis(小陰茎症)、Hypogonadotropic hypogonadism(低ゴナドトロピ
17421	LHCGR	NM_000233.1	1166	aagtggtacaaacttaacagtgc	240682	-	receptor_activity, gpcr	-	lutropin-choriogonadotropic hormone receptor	
17422	MAS1L	NM_052967.1	844	gtggcaccccttaataacagattt	240734	-	gpcr, receptor_activity, signal_transduction	-	rhodopsin-like receptor	
17423	MBC2	NM_015292.1	1031	cagggcattatcggaattcacc	240757	-	receptor_activity, gpcr	-	-	
17424	MGC21621	NM_145015.2	567	gggcacgttgccgactacatcc	240794	-	receptor_activity, signal_transduction	-	-	
17425	MGC26856	NM_152779.1	176	acgaatggcgtggcaagtcacac	240811	-	receptor_activity, signal_transduction	-	-	
17426	MGC40047	NM_175911.2	910	ttgggtctatgaatatatgtttt	240838	-	gpcr, receptor_activity, signal_transduction	-	-	
17427	MRGX1	NM_147199.1	503	ctgattctgtgtgtgtcaaac	240851	-	gpcr, receptor_activity, signal_transduction	-	-	
17428	OPRL1	NM_000913.3	452	ggggaaactgccttgatgtatgc	240862	-	receptor_activity, signal_transduction	-	-	
17429	OR10H1	NM_013940.1	907	aagaagaccttctcagtaaac	240866	-	-	-	olfactory receptor	
17430	OR10H3	NM_013938.1	10	cagaactacagaaacatctga	240869	-	-	-	olfactory receptor	
17431	OR10J1	NM_012351.1	117	tggcgtgttccttgacataaca	240873	-	receptor_activity, signal_transduction	-	olfactory receptor	
17432	OR11A1	NM_013937.2	737	ctgacatcttatgccagaattgt	240895	-	receptor_activity, signal_transduction	-	olfactory receptor	
17433	OR12D3	NM_030959.2	537	atgtcaagccgctcttgaattg	240911	-	receptor_activity, signal_transduction	-	olfactory receptor	
17434	OR1F1	NM_012360.1	817	atggctactgtgtgtatcacagt	240924	-	receptor_activity, signal_transduction	-	olfactory receptor	
17435	OR2H3	NM_007160.2	900	gagattctggggaaaggaaatgg	240928	-	receptor_activity, signal_transduction	-	olfactory receptor	
17436	OR2J2	NM_030905.1	839	ctgtgtcacaccagagttttaat	240946	-	receptor_activity, signal_transduction	-	olfactory receptor	

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17437	OR2W1	NM_030903.1	89	ttgtgcacatcttctacttaatt	240950	-	receptor activity, signal transduction , gpcr	olfactory receptor	-
17438	OR3A2	NM_002551.2	1068	atggcaggcacacacttgggtct	240970	-	receptor activity, signal transduction , gpcr	olfactory receptor	-
17439	OR52A1	NM_012375.1	218	ttgcacttgtagcagcattatg	240981	-	receptor activity, signal transduction , gpcr	olfactory receptor	-
17440	OR511	NM_006637.1	426	ctgtatcggttgattgctgtgt	241022	-	receptor activity, signal transduction , gpcr	olfactory receptor	-
17441	OR5V1	NM_030876.3	861	atgtacggcccatcacaacttac	241048	-	receptor activity, signal transduction , gpcr	olfactory receptor	-
17442	OR6A1	NM_003696.2	262	ctgcgccactacaggtactattg	241052	-	receptor activity, signal transduction , gpcr	olfactory receptor	-
17443	P2RY1	NM_002563.2	1538	gggtgttaccggattaattgga	241083	-	see also 1650 line	olfactory receptor	-
17444	P2RY10	NM_014499.2	947	ttgcattgtcgggatgattaca	241110	-	gpcr, receptor activity, signal transduction	purinergic nucleotide receptor, G- protein coupled	-
17445	P2RY11	NM_002566.3	50	cagctgcggagacaaactcagt	241121	-	gpcr, receptor activity, signal transduction	rhodopsin-like receptor	-
17446	P2RY2	NM_002564.2	526	tgggaatgctccaccacatatat	241128	-	receptor activity, gpcr	-	-
17447	P2RY5	NM_005767.3	1148	tggcaattgtctaccatttaag	241139	-	gpcr, receptor activity, signal transduction	purinergic nucleotide receptor, G- protein coupled	-
17448	P2RY6	NM_004154.3	350	ctgtgtataccggagaaattca	241160	-	gpcr, receptor activity	-	-
17449	P2RY8	NM_178129.3	373	cagatcccgctcggtactcttca	241167	-	receptor activity, gpcr, signal transduction	-	-
17450	RRH	NM_006583.1	562	ctggtgtactgtaccataaac	241200	-	see also 4613 line	-	-
17451	SALPR	NM_016568.1	731	tggagctgaaggacttcaatttt	241227	-	gpcr, receptor activity, signal transduction	N-formyl peptide receptor	-
17452	sdolf	NM_033519.1	318	ctgcacacttccgtactactatg	241236	-	-	olfactory receptor	-

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17453	TA4	NM_175067.1	567	ttgtcagaccgttgtaaatcaaa	241261	-	gpcr, receptor_activity, signal_transduction	-
17454	TAR1	NM_138327.1	571	ggggactactgacctttatgacttc	241279	-	gpcr, receptor_activity, signal_transduction	-
17455	TAR3	NM_175057.1	412	ctgacatcatccaaccaagtttac	241297	-	gpcr, receptor_activity, signal_transduction	-
17456	TG1019	NM_148962.3	94	ccgtggtggccagctgtagtgc	241311	-	gpcr, receptor_activity, signal_transduction	-
17457	VN1R1	NM_020633.2	240	gagaccacaggaactgattctca	241328	-	gpcr, receptor_activity, signal_transduction	-
17458	VN1R2	NM_173856.1	264	ggggctggaccctacactattcc	241348	-	gpcr, receptor_activity, signal_transduction	-
17459	VN1R3	NM_174980.1	108	ttgtttcaccagaggtatgttac	241374	-	gpcr, receptor_activity, signal_transduction	-
17460	VN1R4	NM_173857.1	145	ctgatttagccaactctttagc	241392	-	gpcr, receptor_activity, signal_transduction	-
17461	CASR	NM_000388.2	1505	aagaagtgccagcaggttagc	241435	-	see also 309 line	-
17462	GPRC5B	NM_016235.1	341	tgtgtcggctgccttcacaaag	241474	-	-	-
17463	GPRC6A	NM_148963.1	1416	atgctcacgggatttaataact	241518	-	receptor_activity, gpcr	-
17464	GRM1	NM_000838.2	949	gagcggaatggacgcttcaag	241566	-	see also 550 line	-
17465	GRM2	NM_000839.1	2189	gggctcgtggcctcacaatgtgc	241622	-	receptor_activity, gpcr, signal_transduction	metabotropic glutamate, GABA- B-like receptor
17466	GRM3	NM_000840.1	1642	gggcgatacaacggttcaattt	241647	-	see also 552 line	-
17467	GRM4	NM_000841.1	288	atgaattcatccgcgatagatgg	241684	-	gpcr, receptor_activity, signal_transduction	metabotropic glutamate, GABA- B-like receptor
17468	GRM5	NM_000842.1	1500	tggagatacagctcctattcgaag	241709	-	gpcr, receptor_activity, signal_transduction	metabotropic glutamate, GABA- B-like receptor
17469	GRM6	NM_000843.2	1309	atgattccaccggcaaatgcaca	241740	-	gpcr, receptor_activity, signal_transduction	metabotropic glutamate, GABA- B-like receptor
17470	GRM7	NM_000844.2	2529	atgtacacgacatgtatgtatg	241801	-	gpcr, receptor_activity, signal_transduction	-
17471	GRM8	NM_000845.1	1292	tggcttacgcccctgcacaatag	241834	-	gpcr, receptor_activity, signal_transduction	-
						-	see also 559 line	-



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17472	IRAI3	NM_003979.2	686	caggatgtttatgcgtctattgaata	241877	-	-	-	-
17473	TAS1R1	NM_138697.2	2249	aggacttgccagagactacaac	241924	-	receptor_activity、 gpcr	-	-
17474	TAS1R2	NM_152232.1	1939	ctgtatgcgcgtgcgtctttcc	241942	-	receptor_activity、 gpcr	-	-
17475	PTHR1	NM_000316.2	1564	ttgtgcgaatcatatactgtttc	241957	-	gpcr、 receptor_activity	parathyroid hormone receptor	chondrosarcoma(軟骨肉腫)、Ollier disease(オ リエ病)、metaphyseal chondrodysplasia(骨幹端軟 骨異形成症)、chondrodysplasia(軟骨異形成症)
17476	PTHR2	NM_005048.2	1213	ctgaatacggtagagttctagc	241987	-	receptor_activity、 signal_transduction	parathyroid hormone receptor	-
17477	CALOR	NM_001742.1	297	ctggagatgtctctatcagtc	241999	-	see also 1153 line	-	-
17478	RCP9	NM_014478.3	94	cagtaactacagaggtattcagt	242037	-	receptor_activity	calcitonin receptor	-
17479	CRHR1	NM_004382.2	1018	tggggtgtacaccgactacatct	242053	-	see also 2940 line	-	-
17480	CRHR2	NM_001883.2	823	gtgtctctgatcaattctgtatt	242071	-	see also 1207 line	-	-
17481	VIPR1	NM_004624.2	1159	tttgagtagactacatcatgtttc	242088	-	gpcr、 receptor_activity	vasoactive intestinal polypeptide	small cell lung cancer(肺癌)
17482	GCCR	NM_000160.1	798	atgccatccacgcgaatctgttt	242093	-	receptor_activity、 gpcr、 signal_transduction	glucagon receptor	diabetes mellitus(糖尿病)、diabetes(糖尿病)
17483	GHRHR	NM_000823.1	454	gtgggcatagatcctctattgt	242104	-	receptor_activity、 gpcr、 signal_transduction	G-protein coupled receptor	-
17484	SCTR	NM_002980.1	470	tggcctgtggcgtaataatgtgaac	242116	-	receptor_activity、 gpcr、 signal_transduction	secretin receptor	-
17485	FKSG83	NM_032030.1	794	atgggaactaacgtgtgtctttcc	242150	-	receptor_activity、 signal_transduction 、gpcr	-	-
17486	VN1R5	NM_173858.1	556	ctcgggctacccccagtgaaacg	242166	-	receptor_activity、 signal_transduction 、gpcr	-	-
17487	ADCYAP1 R1	NM_001118.3	652	tgggaccagagattattactacc	242188	-	receptor_activity、 gpcr、 signal_transduction	vasoactive intestinal polypeptide	-
17488	BAI2	NM_001703.1	4081	gtggatctgctgttgcacacagt	242229	-	see also 1115 line	-	-
17489	BAI3	NM_001704.1	3395	cagataaacgctccatattgttt	242331	-	see also 1116 line	-	-
17490	C17orf35	NM_003876.1	664	gtggagtagcagcgcctataaact	242376	-	gpcr、 receptor_activity、 signal_transduction	G-protein coupled receptor	-
17491	C7orf9	NM_022150.2	264	atggagtacacctgcagtcataaa	242381	-	gpcr、 receptor_activity、 signal_transduction	-	-

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17492	CALCRL	NM_005795.2	1295	ctgattctctgtgtatatacatgc	242418	-	receptor_activity, gpcr	calcitonin receptor	-
17493	FZD1	NM_003505.1	1324	aggfgtatgggctcatgtacttc	242450	-	gpcr, receptor_activity, signal_transduction	frizzled receptor	-
17494	FZD10	NM_007197.2	2054	aggfgtgcagccgtaggttaaag	242460	-	receptor_activity, gpcr, signal_transduction	frizzled receptor	-
17495	FZD2	NM_001466.2	454	ccgccgtgcgcctctctatctga	242465	-	gpcr, receptor_activity, signal_transduction	frizzled receptor	-
17496	FZD3	NM_017412.2	2314	cagcatgtcacagactaacagatc	242533	-	see also 6984 line	frizzled receptor	-
17497	FZD4	NM_012193.2	907	gtgctcaagtgtaggtatgatgc	242542	-	see also 5185 line		
17498	FZD5	NM_003468.2	813	ccgaggtctctctcatggattac	242561	-	gpcr, receptor_activity, signal_transduction	frizzled receptor	-
17499	FZD6	NM_003506.2	547	gtggtccacctgtgtgtaaaact	242568	-	see also 2363 line		
17500	FZD8	NM_031866.1	2040	acggcgagctcgcgtgtctatcc	242631	-	receptor_activity, gpcr, signal_transduction	frizzled receptor	-
17501	FZD9	NM_003508.1	1714	tggcagcactgccactataaagg	242644	-	gpcr, signal_transduction	frizzled receptor	-
17502	GLPR	NM_000164.1	279	ctgtaacgggtccttcgatgtgt	242646	-	gpcr, receptor_activity, signal_transduction	gastric inhibitory peptide receptor	-
17503	GLP1R	NM_002062.2	567	ggcagcattgtccgtcttcatca	242662	-	gpcr, receptor_activity, signal_transduction	peptide receptor, G-protein coupled	-
17504	GLP2R	NM_004246.1	285	ttgtaacgggacatttgatcagt	242672	-	see also 2850 line		
17505	GPR110	NM_153840.1	1565	ctgtcacgcaacctagcaatacc	242739	-	see also 10021 line		
17506	GPR111	NM_153839.1	536	ctgagaccataacagatatgttg	242770	-	receptor_activity, gpcr, signal_transduction		-
17507	GPR112	NM_153834.1	2482	aagctaagtaaccctcattgataa	242864	-	receptor_activity, gpcr, signal_transduction		-
17508	GPR113	NM_153835.1	367	ctggtctccgtctatgtacatct	243036	-	receptor_activity, gpcr, signal_transduction		-
17509	GPR115	NM_153838.1	1460	tgggtgtgacggagatcatcac	243090	-	receptor_activity, gpcr, signal_transduction		-

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17510	GPR116	NM_015234.1	72	ctgggaattacgagctactattc	243112	-	gpcr、 receptor_activity、 signal_transduction	-	-
17511	GPR123	NM_032422.1	951	aagccgtgtcttgattatcaaca	243201	-	gpcr、 receptor_activity、 signal_transduction	-	-
17512	GPR124	NM_032777.6	2690	gggattccactaattatctgtgg	243224	-	gpcr、 receptor_activity、 signal_transduction	-	-
17513	GPR128	NM_032787.1	2313	tagcataacctgactagttaat	243302	-	gpcr、 receptor_activity、 signal_transduction	-	-
17514	GPR133	NM_198827.1	564	cagcaagcaccgttactactatg	243322	-	gpcr、 receptor_activity、 signal_transduction	-	-
17515	GPR143	NM_000273.1	825	ttgttggtgtgaatatacatca	243335	-	gpcr、 receptor_activity、 signal_transduction	molecular_function unknown	albinism(白児症)
17516	GPR157	NM_024980.2	568	tggccattgcgtctacttgttac	243343	-	gpcr、 receptor_activity、 signal_transduction	-	-
17517	GPR97	NM_170776.3	1713	caggcccaactccgcactccaaga	243454	-	gpcr、 receptor_activity、 signal_transduction	-	-
17518	LANCL1	NM_006055.1	451	tggcgtgtgtctatatcaacag	243468	-	see also 4214 line	-	-
17519	TAS2R38	NM_176817.1	797	ctgtccctactgattctgtgg	243503	-	receptor_activity、 gpcr、 signal_transduction	-	-
17520	TAS2R39	NM_176881.1	915	cagccactcaattctactgattc	243522	-	-	-	-
17521	TAS2R40	NM_176882.1	164	ctggtgacccgcaattatgttgatg	243530	-	receptor_activity、 gpcr、 signal_transduction	-	-
17522	TAS2R41	NM_176883.1	131	tggatgatgactcattagcttg	243545	-	receptor_activity、 gpcr、 signal_transduction	-	-
17523	TAS2R49	NM_176889.1	536	tagccatctagcaaaacttgata	243571	-	receptor_activity、 gpcr、 signal_transduction	-	-
17524	TAS2R50	NM_176890.1	547	tggagcttcataccctttactct	243579	-	receptor_activity、 gpcr、 signal_transduction	-	-
17525	TAS2R60	NM_177437.1	137	gggtctacggagaattgtgttg	243583	-	receptor_activity、 gpcr、 signal_transduction	-	-
17526	VIPR2	NM_003382.3	344	gtggcgtctgggacaacatcacg	243602	-	gpcr、 receptor_activity、 signal_transduction	vasoactive intestinal polypeptide	-

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17527	XPR1	NM_004736.2	1549	cagtgcctgcgcgatatacaga	243655	-	see also 3254 line			
17528	LJFR	NM_002310.2	1401	gggtgatcacatacaaat	243739	-	see also 1475 line			
17529	GHR	NM_000163.1	776	gggtgctctatgttaacactcc	243848	-	receptor activity	peptide hormone	pituitary dwarfism(下垂体性小人症)	
17530	EPOR	NM_000121.2	1398	ctgccagctttgagtacactate	243895	-	receptor activity, signal transduction	Smad3/Sp-1 heterodimer	erythroleukemia(赤白血病)	
17531	GFRA2	NM_001495.3	1094	cagctgccctgcggacaattacc	243905	-	receptor activity, signal transduction, kinase related	glial cell line-derived neurotrophic factor	-	
17532	GRLF2	NM_022148.2	1063	aggcgggtgatgtgtcacaatcg	243914	-	-	-	-	
17533	CSF3R	NM_000760.2	1270	cagcggagcggatccaagggttg	243923	-	receptor activity, signal transduction	-	agranulocytosis(無顆粒球症)	
17534	F3	NM_001993.2	602	aagatgaacggactttagtgaaga	243958	-	receptor activity	Proto-oncogene C-JUN	-	
17535	FAD104	NM_022763.2	1934	gtggctgcgtaccgaatacacc	244023	-	see also 8458 line	-	-	
17536	IL11RA	NM_004512.3	627	tggagccagctaccgggtaattgt	244076	-	receptor activity	-	-	
17537	IL13RA1	NM_001560.2	281	ccggaaactcgtcgtcaataga	244089	-	receptor activity, signal transduction	hematopoietin/interferon-class (D200-domain) cytokine receptor	-	
17538	IL20RA	NM_014432.2	738	ctgactacgaacaccagttatt	244124	-	receptor activity	-	-	
17539	IL22RA2	NM_092962.2	628	ctgtggaggtactcaagaactct	244163	-	receptor activity	-	-	
17540	MG34923	NM_144717.2	428	ctggagaaacagttactattct	244183	-	receptor activity	-	-	
17541	MPL	NM_005373.1	1404	gcgatcgcgtaccgtttacagc	244209	-	see also 3743 line	-	-	
17542	GRI1	NM_000827.2	692	gggataccggatgctcttcagg	244224	-	see also 528 line	-	-	
17543	GRI3	NM_000828.2	384	ccgcttgcgtgcagttatata	244314	-	see also 529 line	-	-	
17544	GRI1	NM_000830.2	1245	ccgggttcgctgcttaacatt	244388	-	see also 540 line	-	-	
17545	GRIK2	NM_021956.2	1696	atggaaatgggtcgtgaactaatt	244489	-	see also 8216 line	-	-	
17546	GRIK3	NM_000831.2	1251	aggattaactggacgaattgttt	244536	-	receptor activity, channel, signal transduction	potassium channel	-	
17547	GRIK4	NM_014619.2	1590	gggacgaaccccggtattct	244575	-	see also 5794 line	-	-	
17548	GRIK5	NM_002088.3	2497	tggcgtcatggaattcatatgg	244607	-	see also 1353 line	-	-	
17549	GRI4	NM_000829.1	1097	atggacgtagagtgcaattacaca	244643	-	see also 536 line	-	-	
17550	GRI2	NM_001510.1	61	gggaatgggattgatcatctaa	244676	-	see also 1034 line	-	-	
17551	GRIN3A	NM_133445.1	3625	ccgtcagcttaccgtatggaata	244831	-	receptor activity, channel	-	-	
17552	CD163	NM_004244.2	1805	tggagtactgtctcaagataca	244864	-	receptor activity	-	-	
17553	CD5	NM_014207.2	224	aggcggatggcacatggtttgc	244896	-	receptor activity	scavenger receptor	-	
17554	CD5L	NM_005894.1	760	acgtgggtcgaatgtgaagatcc	244920	-	receptor activity, apoptosis	scavenger receptor	-	
17555	CD6	NM_006725.1	1017	ctgctctggcgggtcaacaact	244926	-	receptor activity	scavenger receptor	-	
17556	DMBT1	NM_004406.1	3910	cggcgggtgtagaattaccatg	244955	-	receptor activity	-	esophageal cancer(食道癌), lung cancer(肺癌), malignant brain tumors(脳腫瘍), CNS Tumours(中枢神経腫瘍)	

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17557	M160	NM_174941.2	3601	cagcctcgcgccctttatctaa	245061	-	receptor_activity	-	-
17558	MARCO	NM_006770.2	1408	caggattgtcggcagtagtaacc	245084	-	receptor_activity	-	-
17559	MSR1	NM_002445.2	768	gaggagcgtgtttacaatgtac	245109	-	receptor_activity	-	prostate cancer(前立腺癌)
17560	SRCRB4D	NM_080744.1	771	ctggggcgtccacaatgcttcc	245139	-	receptor_activity	-	-
17561	B2M	NM_004048.2	379	tgttcacagggcccaagatagttaa	245153	-	see also 2730 line	-	-
17562	HLA-E	NM_005516.3	416	acgacggcaggagattatctcacc	245175	-	receptor_activity	MHC class I receptor	-
17563	HLA-F	NM_018950.1	1061	gggtgtctctcacagctaataa	245180	-	receptor_activity	MHC class I receptor	-
17564	MR1	NM_001531.1	71	ccggacgcactctctgagatatt	245186	-	receptor_activity	-	-
17565	ULBP3	NM_024518.1	387	gtgtgaagccgatggatataacc	245220	-	receptor_activity	-	-
17566	CD74	NM_004355.1	615	ctgacgtccaccggaagagtc	245226	-	receptor_activity	chaperone	-
17567	HLA-DMB	NM_002118.3	501	ttgcgaatggggttcagaattg	245231	-	receptor_activity	chaperone	-
17568	HLA-DOA	NM_002119.2	226	gtgtggcgtctgcctgagttgg	245238	-	receptor_activity	MHC class II receptor	-
17569	HLA-DOB	NM_002120.2	505	caggggatatacaagatcaagtgg	245249	-	receptor_activity	MHC class II receptor	-
17570	HLA-DPA1	NM_033554.2	299	gggtggcgttaacattgctatatt	245265	-	receptor_activity	RNA polymerase II transcription factor, enhancer binding	-
17571	HLA-	NM_002121.4	721	ctgccggagtaagacattgacg	245275	-	receptor_activity	transcription factor	-
17572	DQA2	NM_020056.1	244	cgcagagtgacactgagaatat	245280	-	-	MHC class II receptor	-
17573	DQB1	NM_002123.2	164	aggattcgtgtaccagtttaag	245282	-	receptor_activity	MHC class II receptor	diabetes(糖尿病)
17574	HLA-	NM_182549.1	181	gtgtggccagatacatataac	245285	-	receptor_activity	-	-
17575	HLA-DRA	NM_019111.2	186	ctgaccaatcaggcaggtttatg	245295	-	receptor_activity	transcription factor	-
17576	TNFRSF1A	NM_001065.2	666	aagaaccagttaccggcattattg	245302	-	receptor_activity, apoptosis, signal transduction, kinase related	tumor necrosis factor receptor, type I	-
17577	TNFRSF19	NM_018647.2	437	acgaaactgtcggctttcaaga	245330	-	receptor_activity, apoptosis, kinase related	-	-
17578	TNFRSF1B	NM_001066.2	895	cagccttgggtctactaataata	245358	-	receptor_activity, apoptosis, signal transduction	tumor necrosis factor receptor	-
17579	XEDAR	NM_021783.2	751	gggtccacagagcccccacgaatgc	245371	-	receptor_activity, transcription_regulation or	tumor necrosis factor receptor	-
17580	TNFRSF14	NM_003820.2	465	aagtgcagtcagggttatcgtgt	245373	-	receptor_activity, apoptosis, signal transduction	NGF/TNF (6 C-domain) receptor	-

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17581	FLJ30296	NM_173495.1	690	cagcgcgctatcagaacgttacc	245401	-	-	-	-	-	-	atherosclerosis(粥状硬化症)、Niemann-Pick disease(ニーマン・ピック病)
17582	NPC1	NM_000271.1	3934	gagcgcgaacgcctctctaaattt	245583	-	receptor_activity	sterol transporter	-	-	-	-
17583	NPC1L1	NM_013389.1	1222	aagcccgagtgagaaagcttctc	245597	-	receptor_activity	-	-	-	-	-
17584	PTCH	NM_000264.2	587	agacagagtagctgtgaattaa	245632	-	see also 207 line	-	-	-	-	-
17585	PTCH2	NM_003738.2	1410	cggcgtggatgacgtattcttcgc	245692	-	see also 2551 line	-	-	-	-	-
17586	XPO7	NM_015024.2	3233	aggcatcgagcgaattctctta	245788	-	see also 6190 line	-	-	-	-	-
17587	CD14	NM_000591.1	483	acgctcaggagacctaaagataac	245798	-	receptor_activity, apoptosis, signal_transduction	Smad3/Sp-1 heterodimer	-	-	-	alcoholism(アルコール依存症)
17588	UNC5C	NM_003728.2	1213	cggcctcgtcttgcattccaaga	245833	-	receptor_activity, signal_transduction	-	-	-	-	-
17589	ROBO1	NM_002941.2	1255	cagcgatctgatattgttgattta	245896	-	see also 1975 line	-	-	-	-	-
17590	RRBP1	NM_004587.1	2732	tcggcgtatcggttacagaaga	246007	-	receptor_activity, signal_transduction	-	-	-	-	-
17591	AGER	NM_001136.3	1207	gaggcaggcgagagtactactgg	246018	-	receptor_activity, signal_transduction	-	-	-	-	Alzheimer disease(アルツハイマー病)
17592	CD3D	NM_000732.1	194	tggaccacaggaatatataagg	246029	-	receptor_activity, signal_transduction	receptor signaling protein	-	-	-	leukemia(白血病)、diabetes(糖尿病)
17593	GD3E	NM_000733.1	439	tcggtggcccaattgtcattgt	246049	-	see also 478 line	-	-	-	-	-
17594	CD3G	NM_000073.1	218	atgctcggctcttaactgaaga	246056	-	receptor_activity, apoptosis, signal_transduction	receptor signaling protein	-	-	-	leukemia(白血病)
17595	CLDN3	NM_001306.2	605	ctgtctggcgccaacacattatcc	246079	-	receptor_activity	transmembrane receptor	-	-	-	-
17596	CLDN4	NM_001305.3	910	aagccttactctcgccaagtattc	246087	-	receptor_activity	transmembrane receptor	-	-	-	-
17597	CR2	NM_001877.1	2537	atggtagtccggttagtagtgt	246181	-	receptor_activity	transmembrane receptor	-	-	-	-
17598	DCC	NM_005215.1	3754	ccggtgcccaacgctgaaagtgc	246278	-	receptor_activity, apoptosis, cell_cycle	transmembrane receptor	-	-	-	colorectal cancer(大腸癌)、neuroblastoma(神経芽細胞腫)、osteosarcoma(骨髄性骨肉腫)、pancreatic cancer(膵臓癌)、colorectal cancers(結腸直腸癌)、testicular cancer(嚢丸癌)、head and neck squamous cell carcinoma(頭頸部扁平上皮細胞癌)、gastric cancer(胃癌)
17599	EDAR	NM_022336.1	685	cagatatgcaggcgctcacaaaga	246292	-	receptor_activity, signal_transduction	transmembrane receptor	-	-	-	ectodermal dysplasia(外胚葉性形成異常)
17600	EV12A	NM_014210.1	404	ctgaagtattataaaggtaat	246311	-	receptor_activity	transmembrane receptor	-	-	-	-
17601	GPC1	NM_002081.1	956	gtctcagagcgtctcatgaagc	246327	-	receptor_activity	-	-	-	-	-
17602	GPC5	NM_004466.3	2042	cagctggcgactgaattctatgaca	246404	-	-	-	-	-	-	-
17603	GPC6	NM_005708.2	766	gagatcgcaggaggaacacttaag	246408	-	see also 3961 line	-	-	-	-	-
17604	ICAM1	NM_000201.1	1390	gtgactgtaactcgagattctga	246435	-	receptor_activity	Rel A homodimer	-	-	-	-

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17605	IGSF6	NM_005849.1	177	gagccgctgaccataaagtgtac	246442	receptor_activity, signal_transduction	-	-
17606	IL17RD	NM_017563.1	652	ttgttaagccggacaatactagc	246460	see also 7033 line	-	-
17607	KLRA1	NM_006611.1	558	cgagctctgttctggagtaaac	246503	receptor_activity, signal_transduction	-	-
17608	LRR21	NM_015613.1	634	atgtgactccgactctatgacc	246513	-	-	-
17609	LTBR	NM_002342.1	407	gtgccacatgtccgagaattcc	246528	receptor_activity, apoptosis, signal_transduction, kinase related	receptor	-
17610	LU	NM_005581.2	172	cggaacccacaccattatgtg	246549	receptor_activity, signal_transduction	transmembrane receptor	-
17611	M6PR	NM_002355.2	195	aggactggactctactactact	246556	receptor_activity	-	-
17612	MFRP	NM_031433.1	1199	aggacgagtgcaagtttgactac	246579	receptor_activity	-	-
17613	INCR2	NM_004828.2	723	tctgtctgtgggggacatagg	246586	-	-	-
17614	NGFR	NM_002507.1	681	gagatccctggccgttgattac	246590	receptor_activity, apoptosis, signal_transduction	transmembrane receptor	-
17615	PLXN3	NM_017514.1	5543	tgggtggagaggtattatcgaga	246618	receptor_activity	-	-
17616	SARM1	NM_015077.1	549	tggacgcggtctgtatgtgtgc	246626	see also 6225 line	-	-
17617	SFRP1	NM_003012.2	750	tggcccgagatgcttaagtgtga	246639	receptor_activity, apoptosis, signal_transduction	-	-
17618	SFRP4	NM_003014.2	1153	ggcgccaccagctgtagtaatcc	246664	see also 2018 line	-	-
17619	SFRP5	NM_003015.2	1059	ttgcagtcgaattcatgtctctcc	246668	see also 2020 line	-	-
17620	SORL1	NM_003105.3	3593	gtgcgggagtgacgagacaact	246742	receptor_activity	transmembrane receptor	-
17621	TIRAP	NM_052887.2	998	ctgagctccgattcatgtactac	246819	receptor_activity	-	-
17622	TLR5	NM_003268.3	1244	tagctctgcagctaatagttgt	246845	receptor_activity	transmembrane receptor	-
17623	TLR7	NM_016562.2	2770	aagggtatcagcgtctaataatc	246973	see also 6915 line	-	-
17624	TLR9	NM_017442.2	3421	cagccgcaagacgctgtttgtgc	247004	receptor_activity	-	rheumatoid arthritis(関節リウマチ)
17625	TNFRSF10 C	NM_003841.2	621	ttgtacgtctgggatgatatcc	247009	receptor_activity, apoptosis, signal_transduction	transmembrane receptor	-
17626	TNFRSF5	NM_001250.3	260	ttgcgggtgaagcgaattccttag	247015	receptor_activity, apoptosis, signal_transduction, kinase related	-	atherosclerosis(粥状硬化症)、Alzheimer disease(アルツハイマー病)、arthritis(関節炎)、Kaposi's Sarcoma(カポジ肉腫)

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17627	TNFRSF6	NM_000043.3	1212	aagcgtatgacacattgattaaa	247043	-	receptor_activity, apoptosis, signal_transduction	-	lupus erythematosus(円板状エリテマトーデス)、 bladder transitional cell carcinoma(膀胱移行上 皮癌)、leukemia(白血病)、autoimmune lymphoproliferative syndrome(免疫細胞増殖性 エリテマトーデス)、Alzheimer disease(アルツハイ マー病)、arthritis(関節炎)
17628	TNFRSF7	NM_001242.3	618	cagcccaaccacttacctatgt	247049	-	receptor_activity, apoptosis, signal_transduction	receptor	-
17629	TNFRSF8	NM_001243.2	1595	cggaaagagcggagggttaataagc	247062	-	receptor_activity, signal_transduction	-	leukemia(白血病)
17630	WSX1	NM_004843.2	1574	ctgtcgggtccctctatcgatc	247077	-	receptor_activity, signal_transduction	-	-
17631	LOC51036	NM_015854.1	132	gagcaaacggatgcagtcgaattc	247083	-	-	-	-
17632	LY96	NM_015364.2	253	aggatccaaaggattattgcaca	247095	-	receptor_activity, signal_transduction	coreceptor	-
17633	PVRL1	NM_002855.2	91	caggtgaacgaactccatgtatgg	247104	-	see also 1887 line	-	-
17634	PVRL2	NM_002856.1	1015	cagagcccaacgggctatgactgg	247116	-	receptor_activity	coreceptor	-
17635	ZIP2	NM_003460.1	1081	gagtcacccgtttctatagtac	247145	-	see also 2347 line	-	-
17636	CR1	NM_000573.2	4326	cagtcctacgacccaataatg	247182	-	receptor_activity	-	Alzheimer disease(アルツハイマー病)
17637	ITPR1	NM_002222.1	7136	gggttacaacccacgtgtttot	247353	-	see also 1411 line	-	-
17638	ITPR2	NM_002223.1	6428	cagacctgtatogctacacatga	247528	-	channel, receptor_activity, signal_transduction	inositol-1, 4, 5- triphosphate receptor	-
17639	PLAUR	NM_002659.1	759	aagccgttacctgaatgcattt	247584	-	kinase_related, receptor_activity, signal_transduction	translation regulator	atherosclerosis(粥状硬化症)
17640	AHSA2	NM_152392.1	1980	cagctgacccccctaaatgttg	247609	-	-	-	-
17641	AIPL1	NM_014336.2	489	aggttgatgccccgagtgattac	247618	-	receptor_activity	chaperone	-
17642	ANTXR1	NM_018153.2	792	aagaagtctctgcctcgaaattot	247634	-	receptor_activity	-	-
17643	BTN1A1	NM_001732.1	522	cagtatgcaagttcaagagaatg	247657	-	receptor_activity	receptor	-
17644	BTN3A2	NM_007047.2	1225	gagtccttcgctcgataccaataa	247669	-	receptor_activity	-	-
17645	BTNL3	NM_006707.2	568	acggaggtatccagttactctgc	247677	-	receptor_activity	-	-
17646	C6orf33	NM_133367.1	610	ttggcgtgagcgtttaccaatat	247696	-	-	-	-
17647	C6orf80	NM_015439.2	395	ctggcgtgtgtgcaataaggaaac	247711	-	receptor_activity	-	-
17648	CD160	NM_007053.1	319	aggaaggaaacgcgactaaactta	247721	-	receptor_activity, signal_transduction	receptor	-
17649	CD200R	NM_138806.2	553	tggatatcaccctccaaagttag	247754	-	receptor_activity	-	-
17650	CD36	NM_000072.1	795	aagtaaaagtggccaataatcgaca	247796	-	see also 48 line	-	-
17651	CD7	NM_006137.5	705	gtgctcgtggcggagataagaatt	247826	-	receptor_activity, signal_transduction kinase_related	receptor	-



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17652	CD86	NM_006889.2	949	aagggcctcgcaactcttataa	247860	-	receptor activity, transcription_regulat or	-	rheumatoid arthritis(関節リウマチ)
17653	CNGB1	NM_001297.1	2947	ctgtgcccggcagatgatttgg	247887	-	channel	potassium channel	-
17654	CNGB3	NM_019098.2	1475	aagcgagttcggacttggtatga	247950	-	see also 17704 line	-	-
17655	CNTNAP1	NM_003632.1	2545	gcgcgtctatggcagatgaaatt	248005	-	receptor activity, signal transduction	receptor	-
17656	CRL3	NM_139017.3	1256	ctggacgatccagcaagataaat	248068	-	receptor activity, kinase_related, transcription_regulat or, apoptosis, signal transduction	-	-
17657	CRLF3	NM_015986.2	656	aggctcagttctgtaattgtac	248108	-	see also 6596 line	-	-
17658	CRSP3	NM_004830.2	3390	tggcagactagtctgatacagatgg	248233	-	receptor activity, transcription_regulat or	-	-
17659	CRSP6	NM_004268.3	1579	cagcttagcaagccgaattgagg	248302	-	see also 2866 line	-	-
17660	DKFZP434								
17660	N1817	NM_032137.2	1234	gagttgtgtgccacatagaagc	248322	-	-	-	-
17661	DNAJ	NM_032364.4	1283	cagggcgtgtgaagaattgtca	248386	-	-	-	-
17662	EBAG9	NM_004215.3	983	aagcacacagcgaatgaagaag	248424	-	see also 2822 line	-	-
17663	EPS8	NM_004447.3	304	atgaatggctacggatcacc	248427	-	see also 2981 line	-	-
17664	EPS8L1	NM_017729.2	1164	atgggtcctgtgtaattgact	248504	-	kinase_related, receptor activity	-	-
17665	EPS8L2	NM_022772.2	1623	gtgagcgcagcagtcataagaaa	248517	-	-	-	-
17666	EPS8L3	NM_024526.2	444	atgtggcctcaacacatgttc	248520	-	receptor activity	-	-
17667	FCRH1	NM_052938.3	1149	caggcagcgtacagccttatat	248548	-	receptor activity	-	-
17668	FEM1B	NM_015322.2	805	gtgtactgcttctctttagaaca	248560	-	see also 6354 line	-	-
17669	FKSG87	NM_032029.1	643	gagctaccatgagatcctatgg	248611	-	receptor activity	-	-
17670	FLJ10587	NM_018149.2	30	gagcttgcgagacccttctaagg	248622	-	see also 7284 line	-	-
17671	FLVCR	NM_014053.1	1843	aagcagtcagaaatcagcaatttg	248721	-	receptor activity	-	-
17672	FRAG1	NM_014489.1	917	tcggcacacatgtattgtgagg	248730	-	receptor activity	-	-
17673	FREB	NM_032738.2	803	aagatcaactcggggtcactctgg	248739	-	receptor activity	-	-
17674	GABARAP L1	NM_031412.1	432	gtgcctctgaccttacttggg	248744	-	-	-	-
17675	GAC1	NM_006338.1	811	cagcctacaggaaactctatctca	248747	-	receptor activity, signal transduction	receptor	CNS Tumours(中枢神経腫瘍)
17676	GFRA1	NM_005264.2	1289	aggactctcgaagcagcaattac	248766	-	see also 3701 line	-	-
17677	GFRA4	NM_022139.2	120	gcgtttgcgtcccgagtgtgg	248782	-	receptor activity	-	-
17678	GOSR1	NM_004871.1	143	atggaaagcgcgacaggtatagt	248787	-	-	v-SNARE	-
17679	GPA33	NM_005814.1	952	cagacacatcgggtactacatc	248825	-	receptor activity	-	-
17680	GYPB	NM_002100.2	258	ttgtgtgtgatgctgtgtattat	248827	-	-	Smad3/Sp-1 heterodimer	-
17681	HAVCR1	NM_012206.1	898	ctgacggccaataaccactaaagg	248844	-	-	-	-

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17682	HAVCR2	NM_032782.2	668	atgagtcaggagactctagatg	248867	-	-	-	-
17683	IL23R	NM_144701.2	1484	tcgctattcgacaatactacagt	248920	-	receptor_activity	-	-
17684	IMPG1	NM_001563.2	1799	cagtataccacactagtcttat	248964	-	receptor_activity	-	-
17685	ITGA2B	NM_000419.2	1045	tgttgaggcgctccactgtatg	249009	-	receptor_activity, signal_transduction	specific RNA polymerase II transcription factor	Glanzmann thrombasthenia(グランツマン血小板無力症)
17686	ITGA3	NM_002204.1	767	tgggaacttatctgagtatagta	249026	-	receptor_activity, signal_transduction	-	-
17687	ITGA4	NM_000885.2	1669	gagtgccctgatttcagaca	249052	-	see also 576 line	-	-
17688	ITGA5	NM_002205.1	256	tgggagcaccacaggctaatacc	249142	-	receptor_activity, signal_transduction	Proto-oncogene C-JUN	-
17689	ITGA6	NM_000210.1	425	atgcacgcgagtcaggttgata	249179	-	receptor_activity, signal_transduction	cell adhesion receptor	epidermolysis bullosa(表皮水疱症)
17690	ITGA7	NM_002206.1	3390	cagtaaccatcggtgaagattcc	249297	-	see also 1407 line	-	-
17691	ITGA9	NM_002207.1	867	aggcatcggcgaaggttatatt	249310	-	receptor_activity, signal_transduction	cell adhesion receptor	-
17692	ITGB2	NM_000211.1	1269	ctgtgatggcgtgcagatcaatg	249350	-	receptor_activity, kinase_related, apoptosis, signal_transduction	hematopoietic-associated factor 1A complex	leukocyte adhesion deficiency(白血球接着不全), juvenile rheumatoid arthritis(若年性慢性関節リウマチ)
17693	ITGB3	NM_000212.1	268	gagtgaggcccgagtagtactagg	249362	-	see also 161 line	-	-
17694	ITGB4	NM_000213.2	5307	gcgagaacgtgccctacaagttc	249424	-	receptor_activity, signal_transduction	AP-1(JunB/Fra-1 heterodimers)	epidermolysis bullosa simplex(単純型表皮水疱症), epidermolysis bullosa(表皮水疱症)
17695	ITGB5	NM_000213.3	603	aggctgggacgtcattcagatga	249433	-	receptor_activity, signal_transduction	cell adhesion receptor	-
17696	ITGB6	NM_000886.3	594	ttgccaaaccttgtagtagtatt	249476	-	see also 578 line	-	-
17697	ITGB7	NM_000889.1	1358	ggggtccacatttcttaccgaac	249532	-	receptor_activity, signal_transduction	cell adhesion receptor	-
17698	ITGB8	NM_002214.1	1264	cagttccaccatacattagcatc	249569	-	receptor_activity, signal_transduction	cell adhesion receptor	-
17699	ITPR3	NM_002224.1	2121	gtggactgacaagaataaacgagc	249635	-	receptor_activity, channel	inositol-1, 4, 5-triphosphate receptor	-
17700	KDEL3	NM_006855.2	581	ggagagctgagaccataactact	249678	-	receptor_activity	-	-
17701	KIAA1985	NM_024577.2	2800	ctgcaggctgtacgactctattg	249716	-	-	-	-
17702	LIMR	NM_018113.1	1079	ctgacccgcaggatctgtaatcc	249744	-	see also 7259 line	-	-
17703	LOC14345	NM_174902.2	522	cagagaaccaactgtgtattac	249756	-	receptor_activity	-	-
17704	LOC15843	NM_138497.1	597	gggaaggtagcccccacaaactcg	249761	-	-	-	-
17705	LRP3	NM_002333.1	457	ggcgacacgtgtagcatgatta	249765	-	receptor_activity	-	-
17706	LRP5	NM_002335.1	527	ccgctcacgggtacatgtactgg	249777	-	receptor_activity, signal_transduction	-	atherosclerosis(粥状硬化症), diabetes(糖尿病)
17707	MAML2	NM_032427.1	2794	cagcggccagtcgaaagtaatgg	249826	-	receptor_activity	-	-

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[illegible]

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17741	RAMP2	NM_005854.1	230	agggggagcggtagaagaactatg	250794	-	receptor_activity、 signal_transduction、 gpcr	receptor	-
17742	RAMP3	NM_005856.1	217	tcgtgtactatgagagttccacc	250803	-	receptor_activity、 signal_transduction、 gpcr	receptor	-
17743	RAP80	NM_016290.2	1971	gtgaaggccgactcttagtttc	250836	-	-	-	-
17744	RAPSN	NM_005055.3	662	ctgcgtatgcccaacaataga	250843	-	-	-	-
17745	RHBD1	NM_022450.2	2400	ctgcgtggttgacaaacttgc	250861	-	-	-	-
17746	RIF1	NM_018372.2	2189	atgcttatacgcgaataataat	250901	-	-	-	-
17747	RILP	NM_031430.1	1021	caggagcgggaatgaactcaaaagc	250912	-	-	-	-
17748	RNF139	NM_007218.3	2017	tcgtattacacgcgtgaatcatt	250978	-	see also 5026 line	-	-
17749	RTN4R	NM_023004.4	1635	tggccacgcgcacatcaatgact	250995	-	receptor_activity	-	-
17750	RYR1	NM_000540.1	2244	gggtcggcgatgacctctattcc	251016	-	receptor_activity、 channel	receptor	central core disease of muscle(セントラルコア病)、malignant hyperthermia(悪性高体温症)
17751	SCARB1	NM_005505.3	906	ctgccgatccatgaagctaattg	251126	-	receptor_activity	-	atherosclerosis(粥状硬化症)
17752	SCARB2	NM_005506.2	1601	cggcgagtcgactgaagtcctatg	251177	-	see also 3847 line	-	-
17753	SCARF2	NM_153334.3	512	acgtgacagggccagtgacttgc	251183	-	receptor_activity	-	-
17754	SDFR1	NM_012428.1	709	ctgagtgcccaactcgtgaagaatgc	251205	-	receptor_activity	-	-
17755	SEMA4B	NM_020210.2	2340	gtggcagtgaccgctcattatc	251239	-	receptor_activity	-	-
17756	SEMA4C	NM_017789.3	758	tggctcaacgaacccctccttgc	251247	-	receptor_activity	-	-
17757	SEMA4D	NM_006378.2	1184	tggctgaacgagcctagtttgc	251272	-	receptor_activity、 apoptosis	receptor	-
17758	SEMA4F	NM_004263.2	744	ctggattcgggacagataccttgc	251304	-	see also 2862 line	-	-
17759	SEMA4G	NM_017893.2	718	cagacggagtgctttaaccatgt	251328	-	receptor_activity	receptor	-
17760	SEMA5A	NM_003966.1	2813	gagcaacgattccgatacacatg	251387	-	receptor_activity	receptor	-
17761	SLAMF6	NM_052931.3	815	gagattccctatcttcttact	251439	-	receptor_activity	-	-
17762	SLAMF7	NM_021181.3	212	aagggggcactatcatatagacc	251456	-	receptor_activity	-	-
17763	SLC1A5	NM_005628.1	1988	ctgtaccgtcctcaatgtagaag	251483	-	receptor_activity	sodium/dicarboxylate/tricarboxylate cotransporter	-
17764	SLC20A1	NM_005415.3	1593	aaggttcgggctgtgtaacaaga	251512	-	see also 3781 line	-	-
17765	SLC20A2	NM_006749.3	547	gtgttactagcgcgaagaatgag	251539	-	receptor_activity	-	-
17766	SPAP1	NM_030764.2	1206	caggacctgatggctatagaaga	251588	-	-	-	-
17767	TGFBRAP1	NM_004257.3	847	tagcgcctcgatgcgaattatc	251602	-	receptor_activity、 signal_transduction	-	-
17768	TIP47	NM_005817.2	543	gagcggcgtggacagaagaagaagt	251632	-	receptor_activity	-	-
17769	TNFRSF10D	NM_003840.2	542	atgtgccgagcgtgtagaacagg	251636	-	receptor_activity、 apoptosis	transmembrane receptor	-
17770	TNFRSF11A	NM_003839.2	661	atgttacttgcgcggttaata	251656	-	receptor_activity、 signal_transduction	receptor	-
17771	TNFRSF13B	NM_012452.2	89	tggacgggggtggctatgagatc	251670	-	receptor_activity、 signal_transduction	receptor	-

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17772	TNFRSF17	NM_001192.2	666	gaggaggcgcaaccattctgt	251687	-	receptor_activity, signal_transduction	receptor	-
17773	TNFRSF19	NM_032871.3	1272	aggttcgcgtagctcgaattcc	251693	-	receptor_activity	-	-
17774	TNFRSF21	NM_014452.3	586	tggacataccgccatgttgacc	251699	-	-	-	-
17775	TNFRSF9	NM_001561.4	671	aggacactctccgcagatcatct	251738	-	receptor_activity, apoptosis	receptor	-
17776	TNPO3	NM_012470.1	1706	tagcccgattaccttggataag	251803	-	receptor_activity	-	-
17777	TRAP240	NM_005121.1	2532	ctggaccgttatcttgcaatg	251891	-	receptor_activity, transcription_regulation, or,	-	-
17778	TREM1	NM_018643.2	184	atgtgactacacgctagagaagt	252010	-	receptor_activity	-	-
17779	TREM2	NM_018965.1	282	tgtcagcagcagcaacttgg	252025	-	receptor_activity	-	-
17780	TREM5	NM_174892.1	202	agggtccctgacgggtcaatgc	252030	-	receptor_activity	-	-
17781	TRIP3	NM_004773.1	454	ttgcagactgctgttgaagaatt	252049	-	transcription_regulation, ligand-dependent thyroid hormone receptor interactor	-	-
17782	TRPC4	NM_016179.1	1500	tggcggacttcaaggactacatcc	252091	-	see also 6708 line	-	-
17783	TRPC7	NM_020389.1	927	ccggatcaaacctgcgcattaaat	252167	-	see also 7861 line	-	-
17784	TRPM8	NM_024080.3	2796	tggatgttacacgtatgacttt	252256	-	see also 8586 line	-	-
17785	TRPV2	NM_016113.3	509	cggaaattcggccctcagataag	252267	-	-	-	-
17786	TRPV3	NM_145068.2	1197	gggactcagaggcaacaacatc	252297	-	see also 9774 line	-	-
17787	TRPV4	NM_021625.3	826	ttgagcgtcgtgcaaacactac	252322	-	channel	-	-
17788	TRPV5	NM_019841.3	1860	ttgcctcgcgttctatcatct	252340	-	receptor_activity, channel	-	-
17789	UNC13B	NM_006377.2	3416	ttgagcagttcgtgtacaatgg	252411	-	see also 4469 line	-	-
17790	UNC5B	NM_170744.2	2625	aggagccgaaacccgctaatttc	252445	-	receptor_activity, signal_transduction	-	-
17791	WDR31	NM_145241.1	1124	ttgctactcatcacatgatgc	252467	-	-	-	-
17792	ZYX	NM_003461.3	980	tggatctgggtcacaccacaaatc	252483	-	signal_transduction	-	-
17793	APS	NM_020979.1	960	tagagaatggagccgaatacatc	252491	-	signal_transduction	-	-
17794	ARHGAP4	NM_001686.1	1076	tggctgagatctcgttgaaatg	252497	-	SH3/SH2 adaptor protein	-	-
17795	ARHGAP6	NM_001174.2	2835	atgtcgtggactatttactcaga	252523	-	see also 764 line	-	-
17796	BLNK	NM_013314.2	521	gcgagtatagacaatcgatca	252560	-	see also 5395 line	-	-
17797	CRK	NM_005206.2	430	tggacactacaacgttgataga	252585	-	see also 3656 line	-	-
17798	GRAP2	NM_004810.2	589	gagacaacaagggttaattacttt	252602	-	signal_transduction	SH3/SH2 adaptor protein	-
17799	GRB10	NM_005311.2	793	cggccctctgttcgttagtaagg	252609	-	-	SH3/SH2 adaptor protein	-
17800	GRB14	NM_004490.1	1436	gagcaccgactaaactatggattc	252663	-	-	SH3/SH2 adaptor protein	-
17801	GRB7	NM_005310.1	935	ggggttcaggagcgggaagctttgg	252697	-	signal_transduction	SH3/SH2 adaptor protein	-

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17802	LASP1	NM_005148.1	125	aggatgaactgtctggataagttc	252708	-	-	SH3/SH2 adaptor protein	breast cancer(乳癌)
17803	RUSC1	NM_014328.1	187	ccgtcagcgtctccgttgataaa	252719	-	-	-	-
17804	SCAP2	NM_003930.3	556	tagcctcagaacgatgatataa	252739	-	see also 2689 line	-	-
17805	SH2D1A	NM_002351.1	432	gtctgtatcacggttacattta	252765	-	-	SH3/SH2 adaptor protein	Epstein-Barr virus infection(EBウイルス感染症)、lymphoproliferative Duncan's disease(リンパ増殖性疾患)、infectious mononucleosis(伝染性単核症)、lymphoproliferative syndrome (Duncan's disease)(リンパ増殖性疾患)
17806	SH2D3C	NM_005489.1	114	agcctggcagcgtactgtgaag	252780	-	signal_transduction	-	-
17807	SH3BGR	NM_007341.1	238	ctgggtccatagcagattagaag	252788	-	-	SH3/SH2 adaptor protein	-
17808	SH3BGR	NM_003022.1	110	ctggctctacagcagattagaag	252796	-	see also 2021 line	-	-
17809	SH3BP2	NM_003023.2	1762	tgggaacgaacacctctaacaaagt	252814	-	-	SH3/SH2 adaptor protein	cherubism(ケルビム症)
17810	SH3BP5	NM_004844.1	153	cagacgggagactgaacttgagg	252821	-	-	SH3/SH2 adaptor protein	-
17811	SHB	NM_003028.1	1708	gggctttaagcctatcaaacatg	252842	-	signal_transduction	-	-
17812	SLA	NM_006748.1	266	atgttgccagagattaccatg	252856	-	-	-	-
17813	SNX9	NM_016224.3	1642	tggaaatgaatcacagatataaa	252895	-	see also 6729 line	-	-
17814	STAM	NM_003473.2	1339	atgaacgaagatccgatgtatc	252935	-	see also 2349 line	-	-
17815	TP53BP2	NM_005426.1	1745	aagtgcgtccgttctcattgtt	252963	-	apoptosis, signal_transduction, cell_cycle	SH3/SH2 adaptor protein	-
17816	PAG	NM_018440.2	955	cagacacgaacagtgaaactaac	253016	-	kinase_related, signal_transduction	-	-
17817	SHC1	NM_003029.3	521	tggccgcagactgcaaacagatc	253029	-	see also 2031 line	-	-
17818	TRIM	NM_016388.1	467	atgtgctacgcctcacttgatca	253059	-	kinase_related, signal_transduction	-	-
17819	AKAP12	NM_005100.2	3072	ggcgcgacacggctgtagtgagg	253106	-	kinase_related, signal_transduction	-	-
17820	AKAP3	NM_006422.2	1053	atgacttaacggctctctgttagt	253160	-	see also 4498 line	-	-
17821	AKAP4	NM_003886.2	2192	aagcaagcgaacgggcaatttat	253244	-	kinase_related, signal_transduction	-	-
17822	AKAP6	NM_004274.3	374	gggtccgagacctaaccatttca	253261	-	kinase_related	protein kinase A anchor protein	-
17823	AKAP7	NM_004842.2	271	ggcccgatgacgctgaactagt	253435	-	kinase_related	-	-
17824	PDCL	NM_005388.2	1012	ctgacatctgtcgtaactctgc	253469	-	see also 3759 line	-	-
17825	GD19	NM_001770.3	805	aagacgctggaagattatttgt	253480	-	signal_transduction	DNA binding	multiple myeloma(多発性骨髄腫)
17826	FLRT2	NM_013231.2	1176	ggatggcgcgtcagggaattaaa	253520	-	-	receptor signaling protein	-
17827	MADH1	NM_005900.1	1793	tgggttaacctataactcatt	253568	-	see also 4110 line	-	-
17828	MADH5	NM_005903.4	605	aaggcttaccctccctgttatat	253575	-	see also 4113 line	-	-

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17829	MS4A1	NM_021950.2	882	gtgttggtgtaactgaacatc	253630	-	receptor activity, signal transduction	leukemia(白血病)
17830	NSMAF	NM_003580.2	988	gtgttcgacatctacctaagt	253655	-	see also 2376 line	
17831	RGSL4	NM_006480.3	1299	gagcaggtggtacgaatctcagc	253781	-	signal transduction	
17832	SIVA	NM_006427.2	511	cagtgacatgtacgagaaagtc	253785	-	gpcr	GTPase activator
17833	TBL3	NM_006453.2	1298	gcgtcgtatctggagaatgaac	253795	-	apoptosis	-
17834	TIAM1	NM_003253.1	5196	tgggttaggcgtgaagactttgc	253874	-	see also 4524 line	guanyl-nucleotide release factor
17835	FST	NM_006350.2	706	ctggcgagatctattgattagc	253878	-	-	non-hodgkin lymphoma(非ホジキンリンパ腫)
17836	ARHGEF1	NM_004706.3	2258	gaggtggccaccgatcacaaagc	253892	-	cell cycle, signal transduction	-
17837	ARHGEF1	NM_014784.2	1927	aagactatgaccgggttatttc	253909	-	transcription, regulation	-
17838	ARHGEF12	NM_015313.1	210	ttgttcagcgttcgtaaatc	253957	-	see also 6323 line	-
17839	AXIN1	NM_003502.2	882	tggatactccggacacctaaatg	254087	-	apoptosis, signal transduction, cell cycle	hepatocellular carcinoma(肝癌)
17840	AXIN2	NM_004655.1	1720	ctggggcgagcaggtattatcgc	254118	-	signal transduction	colorectal cancer(大腸癌), colorectal cancers(結腸直腸癌)
17841	BCAR1	NM_014567.1	775	ggggcgagcgtatgtatcagagg	254126	-	-	breast cancer(乳癌)
17842	BSG	NM_001728.2	1231	acgtccgcagcaggaactctccc	254134	-	signal transduction	-
17843	CLTCL1	NM_001835.1	3531	agggcggtgagtcctatataga	254204	-	-	-
17844	DIXDC1	NM_033425.1	1700	aggaatcacccggtatcactca	254244	-	-	Di George syndrome(ディジョージ症候群)
17845	DKFZP434J092	NM_015668.1	3313	aaggagtttagcccatatgtatt	254347	-	-	-
17846	DKKL1-pending	NM_014419.1	458	ggggagcttcgaggggtattga	254365	-	-	-
17847	DRCTN1B	NM_032581.2	1310	cagccagtcgggtttatcaaca	254405	-	see also 9252 line	-
17848	DVL1	NM_004421.2	2024	ggggaacccctcgaggtcttcg	254432	-	signal transduction	-
17849	DVL2	NM_004422.1	1539	ctgtgagcgtacctagtaaac	254437	-	signal transduction	schizophrenia(精神分裂病)
17850	GASZ	NM_130768.1	571	atggttacactgcttaacgtgg	254463	-	-	-
17851	KONH7	NM_033272.2	759	gtggtcatcgattcatcctaaaca	254515	-	see also 9392 line	-
17852	LOC13913	NM_173493.1	351	gtgagctacagttattagatgg	254617	-	signal transduction	-
17853	LY86	NM_004271.1	150	cagagttgcgcatcattacaaga	254657	-	apoptosis, signal transduction	-
17854	NPAS3	NM_022123.1	973	atgttcgtcaactgagtaaatat	254683	-	see also 8284 line	-
17855	NXF	NM_178864.2	1088	gggaaccattactgccaaact	254714	-	see also 10227 line	-
17856	PDCD1	NM_005018.1	125	gcggcagagatggtttcttagact	254729	-	apoptosis	systemic lupus erythematosus(全身性エリテマトーデス)
17857	PER1	NM_002616.1	3304	cagtgacctgcgaactctcgc	254755	-	see also 1691 line	-

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図46 (続き)

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17899	TIMM8A	NM_004085.2	235	ttgagcgttcattgatacaagc	255682	-	-	protein translocase	deafness(聾)
17900	SLC6A6	NM_003043.1	388	cggctatgcctcgttgtaattg	255686	-	-	see also 2038 line	
17901	SLC6A4	NM_001045.2	408	tggagtcgagggaataatccaat	255715	-	-	serotonin:sodium symporter	anxiety-related traits(不安に関係した形質)、alcoholism(アルコール依存症)、Alzheimer disease(アルツハイマー病)
17902	SLC6A2	NM_001043.1	718	gagcagcgggattcatgacatcg	255753	-	-	noradrenaline:sodium symporter	alcoholism(アルコール依存症)
17903	SLC6A8	NM_005629.1	652	gcgcccagagaacggcatctatagc	255773	-	-	creatine:sodium symporter	-
17904	SLC6A9	NM_006934.1	566	aggagtgggctatggatgatagg	255780	-	-	see also 4861 line	-
17905	FLJ31236	NM_182632.1	1056	ggggttcaagcaactaatgact	255795	-	-	-	-
17906	NTT5	NM_014037.1	1575	cagcgcaataggagattatgcagg	255833	-	-	neurotransmitters sodium symporter	-
17907	SLC6A11	NM_014229.1	1552	cggccaccctgcctcattaggt	255928	-	-	see also 5547 line	-
17908	SLC6A12	NM_003044.2	951	ctgtgctatcggagtcattattg	255938	-	-	see also 2046 line	-
17909	SLC6A13	NM_016615.2	322	cagcactaggccagctacatagc	255955	-	-	see also 6952 line	-
17910	SLC6A14	NM_007231.1	1194	tgggacacatggcccatatctct	256006	-	-	see also 5043 line	-
17911	SLC6A3	NM_001044.2	481	tggccctcggccagttcaacagg	256027	-	-	see also 640 line	-
17912	SLC6A5	NM_004211.1	2395	atggcttaccgctctactaac	256077	-	-	see also 2820 line	-
17913	SLC6A7	NM_014228.2	2124	ggaacccggacgggcatgtatgt	256094	-	-	neurotransmitters sodium symporter	-
17914	XT3	NM_020208.1	72	gtggccaaactcgtctacagttcg	256096	-	-	-	-
17915	SLC10A1	NM_003049.1	533	aaggacaagggtgccctataaagg	256118	-	-	bile acid:sodium symporter	-
17916	SLC10A2	NM_000452.1	885	aggccgtagtgggtctcaata	256128	-	-	bile acid:sodium symporter	bile acid malabsorption(糖質吸収不全症)
17917	SLC10A3	NM_019848.2	555	tggcacaggtcccttaagcatgc	256156	-	-	bile acid:sodium symporter	-
17918	SLC10A4	NM_152679.2	1130	cgggaaacagggtgtagcagaatgt	256177	-	-	-	-
17919	SLC5A1	NM_000343.1	1494	ttgggatttcacgtatgattact	256210	-	-	sugar porter	congenital glucose-galactose malabsorption syndrome(先天性グルコース・ガラクトース吸収不全症)
17920	SLC23A2	NM_005116.4	2162	acggcatgaggtcgtacaatttg	256255	-	-	see also 3589 line	-
17921	SLC38A1	NM_030674.2	1707	ttggagtcgtaggagttacatct	256313	-	-	-	-
17922	SLC13A2	NM_003984.1	297	gaggttgcgtcgagttacttaa	256319	-	-	low affinity sodium:dicarboxylate cotransporter	-
17923	SLC28A1	NM_004213.2	1888	gagcgacttctccagatagttgc	256342	-	-	nucleoside:sodium symporter	-
17924	SLC28A2	NM_004212.1	1979	cagtgctatggccctactactaa	256379	-	-	purine nucleoside transporter	-
17925	SLC28A3	NM_022127.1	782	atgggaatcgggctacagtttc	256396	-	-	-	-
17926	SLC15A1	NM_005073.1	2053	tggctcgttctactactacatc	256461	-	-	see also 3545 line	-
17927	SLC15A2	NM_021082.2	476	ttgatggccctgagttactagc	256480	-	-	see also 8081 line	-

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17928	SLC17A5	NM_012434.3	814	ttgtgagatctggttagtgga	256552	-	-	-	-	-
17929	SLC12A1	NM_000338.1	2169	ttgtgggaccgcgaactgtgt	256631	-	-	-	see also 284 line	-
17930	SLC12A2	NM_001046.2	1501	ttgtgatttcgtcataggaca	256712	-	-	-	see also 641 line	-
17931	SLC12A5	NM_020708.3	1907	gagggccagcttcgatattacc	256800	-	-	-	see also 7927 line	-
17932	SLC12A7	NM_006598.1	1440	gcgtggtctacagataagttc	256829	-	-	-	see also 4631 line	-
17933	SLC12A3	NM_000339.1	1311	ctgccactacggcctcatcaact	256845	-	-	-	symporter	Gitelman syndrome (hypomagnesemia-hypokalemia)(低カリウム血症)
17934	SLC12A6	NM_005135.1	2958	ccgaatacaatgctacattga	256949	-	-	-	see also 3611 line	-
17935	SLC13A4	NM_012450.2	2445	ctggaggtcaacggttattgaat	256973	-	-	-	-	-
17936	SLC4A4	NM_003759.1	2523	atggcttcttcgtggtatgtagc	257056	-	-	-	see also 2569 line	-
17937	SLC4A5	NM_021196.2	2362	ctgatgttctgtggatcgatgc	257103	-	-	-	-	-
17938	SLC4A7	NM_003615.2	2631	aaggtgcgatcgacaatcagtg	257169	-	-	-	-	-
17939	SLC12A4	NM_005072.3	948	tgggggcataaagtcttatattg	257212	-	-	-	see also 3544 line	-
17940	SLC13A1	NM_022444.3	1111	tagtcgagaccgcggattgttc	257264	-	-	-	see also 8358 line	-
17941	SLC13A3	NM_022829.3	709	atgaatatcgtcggaacatctgg	257296	-	-	-	see also 8485 line	-
17942	SLC16A1	NM_003051.2	735	ttggggcttgctactactaaactgc	257327	-	-	-	symporter	mevalonate uptake facilitator(メバロン酸攝取促進)
17943	SLC16A2	NM_006517.1	1184	ctgagcttctcatgtttgttct	257368	-	-	-	symporter	-
17944	SLC16A3	NM_004207.1	333	atgcttggggggtctcttttg	257379	-	-	-	symporter	-
17945	SLC16A4	NM_004696.1	725	tggagctatcctcattgaattgg	257398	-	-	-	see also 3219 line	-
17946	SLC16A5	NM_004695.2	1673	acgtccagctgcgcgtcaataagc	257425	-	-	-	symporter	-
17947	SLC16A6	NM_004694.2	452	cggacacccgtctggttagtgatg	257433	-	-	-	symporter	-
17948	SLC16A7	NM_004731.3	538	ctgcaaccgccttaaccataat	257453	-	-	-	see also 3249 line	-
17949	SLC17A1	NM_005074.1	512	gagccgctacttctctatgagt	257506	-	-	-	symporter	-
17950	SLC17A2	NM_005835.1	1318	cagtactgtctcctatgtaaca	257571	-	-	-	symporter	-
17951	SLC17A3	NM_006632.1	436	tggaaatagccctcgttctacatt	257581	-	-	-	symporter	-
17952	SLC1A1	NM_004170.3	478	ctgcactggattccaaactatcc	257615	-	-	-	sodium:dicarboxylate/tricarboxylate cotransporter	-
17953	SLC1A3	NM_004172.3	908	gagactcttaccggaatcacaga	257665	-	-	-	see also 2801 line	-
17954	SLC1A4	NM_003038.2	1221	cagcgacccttccctctatgag	257689	-	-	-	sodium:dicarboxylate/tricarboxylate cotransporter	-
17955	SLC1A6	NM_005071.1	1507	ttgaccggcttcgacaaatgacc	257704	-	-	-	see also 3541 line	-
17956	SLC1A7	NM_006671.3	1493	cogtttccgcaccatgaittaacg	257717	-	-	-	sodium:dicarboxylate/tricarboxylate cotransporter	-
17957	SLC23A1	NM_005847.2	1590	agggcgctggtctgtacagtggtg	257731	-	-	-	-	-
17958	SLC24A1	NM_004727.1	378	atgttgcatacgttctactta	257737	-	-	-	symporter	-
17959	SLC24A2	NM_020344.1	379	aaggcgagcttgagaatagtaaca	257782	-	-	-	see also 7842 line	-
17960	SLC24A3	NM_020689.3	1234	tggccagctcagctgttgatcaat	257833	-	-	-	-	-
17961	SLC34A1	NM_003052.2	923	tggcagagctctgtgataaccagc	257847	-	-	-	-	-
17962	SLC5A4	NM_014227.1	298	aggagctgccaccgtaacatttg	257853	-	-	-	symporter	-

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17963	SLC5A5	NM_000453.1	470	gcgcagcgtcggagctcttca	257895	-	-	thyroid cancer(甲状腺癌)、hypothyroidism(甲状腺機能低下症)、thyroid hormonogenesis(甲状腺ホルモン合成障害)
17964	TSCOT	NM_033051.2	1296	tggaaaggtgtctcgtactcgc	257920	-	-	symporter
17965	FLJ14753	NM_032558.1	482	tggctcagacagccttcttagc	257940	-	see also 9247 line	-
17966	HIAT1	NM_033055.2	1125	aggaattcgaggattatgcaatg	257975	-	see also 9355 line	-
17967	MGC11332	NM_032718.2	341	ggctctcggagcgcgtatgtagg	257982	-	see also 9277 line	-
17968	LOC13330	NM_178833.2	781	ctgtccatgggtccctgtatgt	258024	-	-	-
17969	MGC43026	NM_178527.2	3223	ctgtctcttaagcgtgaattg	258154	-	channel	-
17970	SLC9A1	NM_003047.2	1218	tggcgagtgagcagatcaacaac	258167	-	-	solute:hydrogen antiporter
17971	SLC9A2	NM_003048.3	1651	ttgtcgggtgtttgcatcgtga	258211	-	-	solute:hydrogen antiporter
17972	SLC9A3	NM_004174.1	1494	cggacagatcgggcacaaattat	258235	-	-	solute:hydrogen antiporter
17973	SLC9A5	NM_004594.1	265	ctgtctcggaaagtaacatctct	258245	-	-	solute:hydrogen antiporter
17974	SLC9A6	NM_006359.1	1453	atgcacggcaaatgtgttcagc	258292	-	see also 4449 line	-
17975	SLC9A7	NM_032591.1	936	ctgaacactcacgccttggatgc	258315	-	-	-
17976	SLC9A9	NM_173653.1	644	ctgcacgtcgcagggtaatta	258332	-	see also 10103 line	-
17977	SLC4A1	NM_000342.1	985	gagagaggtgttcgcatagatgc	258369	-	-	chorea-acanthocytosis(有棘赤血球舞踏病)、elliptocytosis(楕円赤血球症)、erythrocytosis(赤血球増加)、ovalocytosis(卵形赤血球増加)
17978	SLC4A11	NM_032034.1	173	tcgaggattcaagctactacaag	258380	-	-	inorganic anion exchanger
17979	SLC4A2	NM_003040.2	2765	acggcgggtgagaaacatgcatgg	258430	-	-	inorganic anion exchanger
17980	SLC4A3	NM_005070.1	847	gtgtcgcgcacacttagtgaaa	258447	-	see also 3540 line	-
17981	SLC4A8	NM_004858.1	91	cagggtgggacacagtcacattct	258460	-	see also 3376 line	-
17982	SLC7A11	NM_014331.2	1215	tggctgatttatcttcgataca	258548	-	see also 5626 line	-
17983	FLJ10847	NM_018242.2	312	ctggcaatcgcggttatcaatgt	258562	-	see also 7341 line	-
17984	FLJ31196	NM_152908.2	1286	ttgcgggtttatagtgctttca	258613	-	-	-
17985	CHDC1	NM_015116.1	960	aagtgctcgtgattccaatgtgt	258644	-	-	-
17986	FLJ10560	NM_018138.1	316	tggcgtgctttacttcgaata	258693	-	-	-
17987	FLJ37307	NM_178515.2	536	tggaggaacactcccttctcaga	258740	-	-	-
17988	HT008	NM_018469.3	3296	ccgactgacagagatagtagtagg	258810	-	-	-
17989	KST1	NM_052944.2	851	cagacgtgcatcgtcttatagg	258823	-	-	-
17990	MGC34837	NM_152377.1	108	aagactccccgtggatcagatgc	258835	-	-	-
17991	NALP13	NM_176810.1	1162	gggagagacactacgggtatatt	258898	-	-	-
17992	PTD015	NM_024684.2	148	aaggctctaatcaacccataag	258945	-	-	-

図46 (続き)

17993	SLC2A1	NM_006516.1	1547	aggccggaacctcgatgatcg	258962	-	-	glucose transport defect、blood-brain barrier(血液脳関門におけるグルコース通過異常)、bladder cancer(膀胱癌)、diabetes mellitus(糖尿病)、endometrial cancer(子宮癌)、lung cancer(肺癌)、pancreatic cancer(膵臓癌)、diabetes(糖尿病)、head and neck cancer(頭頸部癌)、gastric cancer(胃癌)、diabetes mellitus(糖尿病)、diabetes(糖尿病)
17994	SLC2A10	NM_030777.3	151	tggctgaccttggatgaac	258964	-	-	sugar porter
17995	SLC2A11	NM_030807.2	216	acgctcggagcagatcagg	258975	-	-	sugar porter
17996	SLC2A12	NM_145176.1	956	atcgagaccgaataatgtagg	259010	-	see also 9778 line	-
17997	SLC2A13	NM_052885.1	666	aggccattagtcaccattaata	259047	-	-	sugar porter
17998	SLC2A14	NM_153449.2	1121	cggtgtggttaatactcttc	259159	-	-	-
17999	SLC2A2	NM_000340.1	1338	tggaggtggcgctgtaaacatgg	259134	-	see also 287 line	-
18000	SLC2A4	NM_001042.1	149	ccgtcgggtcccaacagatagg	259165	-	-	diabetes mellitus(糖尿病)、diabetes(糖尿病)
18001	SLC2A5	NM_003039.1	239	atggtagacagggtgaattcatg	259176	-	-	sugar porter
18002	SLC2A6	NM_017585.2	497	ccggtgtacgtgtgagatgac	259195	-	-	sugar porter
18003	SLC2A8	NM_014580.2	864	gggggtcaacgocgctcatgtct	259199	-	-	sugar porter
18004	SLC2A9	NM_020041.1	339	aaggcatgagacgacgaatgacc	259206	-	-	sugar porter
18005	SLC35A2	NM_005660.1	867	ttgtcaagtacgctgacataac	259230	-	-	sugar porter
18006	SLC35A3	NM_012243.1	267	atcgttattccagaaacttaaa	259236	-	see also 5220 line	-
18007	SLC35C1	NM_018389.3	890	cagtcgctgaccccaatgtgt	259276	-	-	sugar porter
18008	SLC35D1	NM_015139.1	850	cagtcctgctgacgcagataaat	259294	-	see also 6258 line	-
18009	SLC37A1	NM_018964.2	1352	ctgcgattaggtattactaac	259317	-	see also 7611 line	-
18010	SLC37A4	NM_001467.2	1461	ttgttagtgctcctcatcaggt	259343	-	-	sugar porter
18011	SLC7A7	NM_003982.2	1620	atggtatcatggcattgatctac	259360	-	-	glycogen storage disease(グリコーゲン蓄積症)
18012	SLC7A2	NM_003046.1	558	togtatgtataggtacatcaag	259372	-	-	lysine protein intolerance(リジン尿性タンパク不耐症)
18013	SLC7A3	NM_032803.3	923	ttggttgcactgtattgtatcc	259418	-	-	basic amino acid permease
18014	SLC7A5	NM_003486.4	1495	cagcggggtgcccgtctacttct	259451	-	-	basic amino acid transporter
18015	SLC7A8	NM_012244.2	1467	ctggactttctgaattactgta	259462	-	see also 5221 line	-
18016	FLJ10815	NM_018231.1	1054	aagatcatctggccagataaaga	259476	-	-	-
18017	FLJ39822	NM_173512.1	850	gtggctccgctctatcatatgt	259494	-	-	-
18018	FLJ90709	NM_173514.1	1783	gggctggtgctaacctgtattgttc	259574	-	see also 10078 line	-
18019	MGC15523	NM_138570.1	1291	atgccctctcctcggttaaacgc	259582	-	-	-
18020	SLC12A8	NM_024628.3	1269	acgttgcaagtggactactttac	259606	-	-	-
18021	SLC36A1	NM_078483.1	308	cagcgtttgtgcaagcaatag	259623	-	see also 9509 line	-
18022	SLC36A4	NM_152313.2	136	gagggcagagagctagatagtg	259647	-	see also 9840 line	-
18023	SLC38A3	NM_006841.3	1363	ttggcctgctcactgtgtatcaac	259712	-	-	non-small-cell lung cancer(非小細胞肺癌)
18024	SLC38A4	NM_018018.2	1355	cggagcgcctatgcaattctcat	259749	-	see also 7212 line	-
18025	SLC38A5	NM_033518.1	982	aagacatgtttggaatgtcagt	259777	-	-	-
18026	SLC7A10	NM_019849.1	1443	ctgtggggtggcggtcatcaca	259798	-	-	-
18027	SLC7A13	NM_138817.1	1248	caggaaacccaatctatctatcc	259834	-	-	-

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18028	SLC7A4	NM_004173.1	440	atgttctctcgaatacatc	259852	-	-	basic amino acid transporter	-
18029	SLC7A6	NM_003983.1	591	cagctacgttattcttagagg	259864	-	see also 2721 line	-	-
18030	SLC7A9	NM_014270.1	614	ctgaagcctctcaaatcttg	259894	-	-	cystine transporter	cystinuria(シスチン尿症)
18031	VIAAT	NM_080552.2	496	ccgtcaggagagacattat	259920	-	-	-	-
18032	SLC17A4	NM_005495.1	786	aggatggccttacgtctc*ata	259950	-	-	symporter	-
18033	SLC17A7	NM_020309.1	1422	gtggcagtagctgttcttaattg	259972	-	-	-	-
18034	SLC34A2	NM_006424.1	1395	tggatagggcgtataaccattg	260001	-	-	-	-
18035	ANKH	NM_054027.3	1073	ggagaatcagctcggcctattgca	260032	-	see also 9499 line	-	-
18036	SLC26A11	NM_173626.1	1520	caggacgctctggcgtgttaaga	260050	-	-	-	-
18037	SLC26A2	NM_000112.1	1015	aaggcacccattctattgaact	260077	-	see also 95 line	-	-
18038	SLC26A4	NM_000441.1	2382	ttgacggctcattgctctatact	260180	-	see also 349 line	-	-
18039	SLC26A6	NM_022911.2	1578	tgtgtgttgccgtctctctctcc	260200	-	-	-	-
18040	SLC26A7	NM_052832.2	2083	aagcaatgacgtattatggaaac	260247	-	see also 9433 line	-	-
18041	SLC26A8	NM_052961.2	170	atgttaagcgtgaagtatacaat	260259	-	-	-	-
18042	SLC22A11	NM_018484.2	547	ctgcggtttccacaacaatgacc	260375	-	-	-	-
18043	SLC22A7	NM_006672.2	445	ggagtagagaccactcagaattc	260384	-	-	sodium-independent organic anion carrier	-
18044	SLC01B1	NM_006446.2	1954	gtggcacacgtgggtcatgtagg	260422	-	-	-	-
18045	AFM	NM_001133.2	1414	ctgtacgctaagtgaaagattg	260479	-	-	-	-
18046	ECM1	NM_004425.2	1519	gtgtgtgtcccgacgtaaatct	260508	-	see also 2958 line	-	-
18047	LOC90139	NM_130783.1	272	ggcgcgtcgtgagaacaagtgt	260512	-	-	-	-
18048	KCNJ3	NM_002239.2	536	aagccacgctcggtaactacacg	260524	-	see also 1434 line	-	-
18049	KCNJ6	NM_002240.2	1355	tgtgtcaccctgctgattagc	260581	-	channel, gpcr	G-protein activated inward rectifier potassium	diabetes mellitus(糖尿病)、diabetes(糖尿症)
18050	KCNJ5	NM_000890.3	794	gtgtccagagaggattactctcc	260589	-	see also 581 line	-	-
18051	KCNJ12	NM_021012.2	516	gtgcccgtggccgtctctcatgg	260596	-	-	inward rectifier potassium channel	-
18052	KCNJ13	NM_002242.2	861	acgtactatcactccattacacc	260621	-	channel	inward rectifier potassium channel	-
18053	KCNJ14	NM_013348.2	1185	tggagcacccagtgatctctcc	260633	-	channel	-	-
18054	KCNJ15	NM_002243.3	750	ttgtgtcatcacgaccttgatga	260642	-	channel	-	-
18055	KCNJ16	NM_018658.1	1591	gcgagacgaaggtcatttagtgc	260688	-	channel	-	-
18056	KCNJ2	NM_000891.2	1148	cagtgaatcgatcgatatcttc	260706	-	channel	inward rectifier potassium channel	-
18057	KCNJ4	NM_004981.1	259	ctggcgtcatatctctcatgat	260724	-	channel	-	-
18058	KCNJ8	NM_004982.2	464	ctgcaacctggcgataagaaca	260730	-	channel	ATP-activated inward rectifier potassium channel	-
18059	KCNJ9	NM_004983.2	964	tgtgtgtcgccttggttatcagc	260753	-	channel, gpcr	G-protein activated inward rectifier potassium	-

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18060	KCNK1	NM_002245.2	1044	gagatcaggtgcacatcataga	260758	-	channel	inward rectifier potassium channel	-
18061	KCNK6	NM_004823.1	930	ccgtgccctgccagtttcaatgc	260763	-	channel	inward rectifier potassium channel	-
18062	KCNQ5	NM_019842.2	628	cgggttgctgttcgatataga	260768	-	channel	inward rectifier potassium channel	-
18063	KCNE1	NM_000219.1	38	cagcggtagcgcctttctgacc	260835	-	channel	potassium channel regulator	Jervell and Lange-Nielsen syndrome(シャープ-ペ ル・ランゲ ニールセン症候群)、long QT syndrome(QT延長症候群)
18064	KCNQ1	NM_000218.2	1878	ccgcctgaaccgagtagaagaca	260849	-	channel	-	Jervell and Lange-Nielsen syndrome(シャープ-ペ ル・ランゲ ニールセン症候群)、Romano-Ward syndrome(ロマノ・ワード症候群)
18065	KCNK2	NM_014217.1	747	gtggttatcactcttaacaactat	260893	-	channel	outward rectifier potassium channel	-
18066	KCNAB1	NM_003471.2	1047	taggtgttgccgaatgacatagg	260927	-	channel	-	-
18067	KCNAB2	NM_003636.2	414	atggcatcaactcttcgataca	260944	-	channel	-	-
18068	KCNAB3	NM_004732.2	497	cagaaaccgagcagaggttaagc	260959	-	channel	voltage-gated potassium channel	-
18069	KCNE2	NM_172201.1	429	aagagccaaatctgaatctaga	260976	-	channel	voltage-gated potassium channel	-
18070	KCNE3	NM_005472.2	450	aagcgtagtgcccoctatctgt	260985	-	see also 3810 line	potassium channel	long QT syndrome(QT延長症候群)
18071	KCNQ3	NM_133329.4	1299	gagtgcatcgtgaggttcatgt	261000	-	see also 9564 line	-	-
18072	KCNH6	NM_030779.2	1248	ctggaccgctactctgagtgagg	261030	-	channel, signal transduction transcription regulat	-	-
18073	KCNQ2	NM_172106.1	942	gggggaggaacgaccaccttgaca	261043	-	channel	-	benign familial neonatal convulsions(-), epilepsy(てんかん)
18074	KCNQ2	NM_004518.2	1820	tggacatcgtgtccgaattaaag	261047	-	channel	-	benign familial neonatal convulsions(-), epilepsy(てんかん)
18075	KCNQ4	NM_004700.2	1375	cagcggatggcgcacaaagacc	261106	-	channel	-	epilepsy(てんかん)
18076	KCNV2	NM_133497.2	775	ctggggtggtgctcgaagtaca	261113	-	channel	-	deafness(聾)
18077	KCNMB1	NM_004137.2	764	aaggtcagagccaaatcccaaga	261119	-	channel	potassium channel regulator	-
18078	KCNMB2	NM_005832.3	562	atgctccatcacggaacattt	261125	-	channel	-	-
18079	KCNMB3	NM_014407.3	735	tgtctcggacaacacattctaaa	261148	-	channel	-	-
18080	KCNMB4	NM_014505.4	536	gcgtgtgtgctcttccttc	261167	-	channel	-	-
18081	KCN1	NM_021072.1	821	tgtcgtttatcacgacttcaag	261187	-	see also 8077 line	-	-
18082	KCNK10	NM_021161.3	2029	ggagccggagagaaactactaata	261265	-	see also 8114 line	-	-
18083	KCNK12	NM_022055.1	867	ctgcattactcgtcttcaacg	261271	-	channel	-	-
18084	KCNK13	NM_022054.2	1177	cagccagaacgccactatgaga	261275	-	see also 8253 line	-	-
18085	KCNK17	NM_031480.2	774	cggcactactcgtgttggaatga	261287	-	-	-	-
18086	KCNK4	NM_016611.2	623	acgtgccaccggagctagtaaga	261303	-	channel	-	-
18087	KCNK5	NM_003740.2	863	tgtgtatccacccttcgtattc	261318	-	see also 2553 line	-	-

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18088	KCNK7	NM_005714.1	896	cagcctgcaccccgctgattacc	261324	-	channel	-	-
18089	KCNK9	NM_016601.2	726	tggccttttagctttatgtatc	261331	-	channel	voltage-gated ion channel	-
18090	CACNA2D	NM_000722.1	119	tcggcgcgtactatcaaatcgt	261338	-	see also 471 line	-	-
18091	CACNG1	NM_000727.2	482	gcgacccgcgtccatgttctatg	261466	-	channel	dihydropyridine-sensitive calcium channel	-
18092	CACNB1	NM_000723.3	1923	ctggggagcaggcgtctacattc	261482	-	channel	voltage-gated calcium channel	-
18093	CACNB2	NM_000724.1	808	tgggtgataggcgcttggtgtaa	261492	-	see also 475 line	-	-
18094	CACNB4	NM_000726.1	1417	ttgaaagacgaagtctaagacc	261558	-	channel	voltage-gated calcium channel	idiopathic generalized epilepsy(特発性全般癇癇)、myoclonic epilepsy(ミオクローヌスてんかん)
18095	CACNG2	NM_006078.2	865	gtgtggcgggtgcacatgtttat	261566	-	see also 4221 line	-	-
18096	CACNG3	NM_006539.2	1780	gtgttgccggtgcacatctatat	261592	-	see also 4572 line	-	-
18097	CACNG4	NM_014405.2	252	ctgttcgggcatcaactcc	261601	-	see also 5663 line	-	-
18098	CACNG5	NM_014404.1	208	ggcgttgcttcaccatagaata	261607	-	channel	-	-
18099	CACNG7	NM_031896.3	758	gcgacgtgtccatccaatgaag	261634	-	see also 9048 line	-	-
18100	CACNG8	NM_031895.4	396	gagcgtctgcgtgaagatcaat	261637	-	see also 9047 line	-	-
18101	TRPC3	NM_003305.1	1325	aggcacaagcttcattaatgctg	261729	-	see also 2243 line	-	-
18102	TRPC5	NM_012471.1	2994	aagcgcacttggaagtcca	261810	-	see also 5345 line	-	-
18103	TRPC6	NM_004621.3	653	ggagagaaggttagctaactgagg	261830	-	see also 3141 line	-	-
18104	TRPM1	NM_002420.3	1823	gggcttaagctcttaaatctc	261923	-	channel	-	melanoma(メラノーマ)
18105	TRPM3	NM_020952.1	274	aagatatgcacataggtatgc	261991	-	see also 8046 line	-	-
18106	SCN11A	NM_014139.1	2879	caggagagccttggtatactaac	262160	-	see also 5511 line	-	-
18107	SCN1B	NM_001037.2	329	aggatctgtctatcttcacacc	262229	-	see also 639 line	-	-
18108	SCN2B	NM_004585.2	362	cgcgatgaagatcattaacctga	262241	-	channel	voltage-gated sodium channel	-
18109	SCN3B	NM_018400.2	996	aggcccgaggcggttaagattt	262246	-	see also 7447 line	-	-
18110	SCN5A	NM_000335.3	737	ctgcctgcacgcggttcactttcc	262260	-	channel	-	sick sinus syndrome(洞機能不全症候群)、heart block(房室ブロック)、long QT syndrome(QT延長症候群)、Brugada syndrome(ブルガダ症候群)、cardiac conduction defect(心臓興奮伝導障害)
18111	SCN7A	NM_002976.1	3834	cagtaacctgcgccattaaacaag	262391	-	channel	voltage-gated sodium channel	-
18112	ACCN2	NM_001095.2	1788	gaggcacgttgagagacttaacc	262450	-	channel	-	-
18113	ACCN3	NM_004769.1	1011	cggctgcgaatgggtgacatgc	262455	-	channel	-	-
18114	APXL	NM_001649.2	993	ctgggtatgttcgcgataagaaga	262467	-	see also 1092 line	-	-
18115	SCNN1B	NM_000336.1	1602	ttgtcaagctcaacatctacttc	262508	-	channel	amiloride-sensitive sodium channel	pseudoaldosteronism(仮性アルドステロン症)、pseudohypoaldosteronism(偽性低アルドステロン症)
18116	SCNN1D	NM_002978.2	860	ctggtaccacttcacatattgtgg	262511	-	channel	amiloride-sensitive sodium channel	-
18117	SCNN1G	NM_001039.1	684	gtgtgataagctacacatcatga	262524	-	channel	amiloride-sensitive sodium channel	pseudoaldosteronism(仮性アルドステロン症)、pseudohypoaldosteronism(偽性低アルドステロン症)
18118	ACCN4	NM_018674.3	1773	gagatctctgacatcatctatga	262547	-	see also 7548 line	-	-

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18119	ACON5	NM_017419.1	327	acgtcattgagggttaaatgt	262558	-	channel	-	-
18120	CATSPER	NM_053054.2	903	cagcgtgggatatctgactatca	262595	-	see also 9488 line	-	-
18121	CATSPER	NM_054020.2	402	cagctagctgcttctctataaa	262619	-	see also 9497 line	-	-
18122	CATSPER	NM_178019.1	87	cagcgcaactcgaggagtaatttc	262634	-	channel	-	-
18123	MCOLN3	NM_018298.9	1186	aagatctaaactgattatgattgt	262700	-	channel	-	-
18124	MGC15619	NM_032369.1	1304	cagaacggcaactcttaagggtta	262727	-	channel	-	-
18125	NOLA1	NM_018983.2	550	aagatgacatagtttgtaaatgt	262735	-	channel	-	-
18126	TPCN1	NM_017901.3	1411	gtccaggagagcgctatcttacc	262745	-	channel	-	-
18127	TPCN2	NM_139075.1	1520	ctgcgtcttcttggtactacc	262774	-	channel	-	-
18128	TRPM4	NM_017636.2	129	ctgcacgaagttcatgttgact	262793	-	receptor_activity、	-	-
18129	TRPM5	NM_014555.2	2216	tggggaacgtggtcatgtacttc	262817	-	channel	-	-
18130	VGCNL1	NM_052867.1	3488	ggagcgatcctcgaatctctatat	262956	-	channel	-	-
18131	CLCA1	NM_001285.1	1511	gggggttcgctcggcattact	263015	-	channel	-	-
18132	CLCA2	NM_006536.3	1212	cagcaatgatgatgaagttgc	263079	-	see also 4569 line	-	-
18133	CLCA4	NM_012128.2	994	gggggttaaggaccgcctaaatcg	263157	-	channel	-	-
18134	CLCN1	NM_000083.1	2755	acgaattcaactcgaagaagtagc	263238	-	see also 55 line	-	-
18135	CLCN2	NM_004366.2	2481	tggatcgttactctaaaggagc	263262	-	see also 2927 line	-	-
18136	CLCN4	NM_001830.2	894	gtcggtgtattgaccatattcg	263333	-	see also 1188 line	-	-
18137	CLCN6	NM_001286.1	178	tggattatgatgcgtgtataaat	263414	-	see also 847 line	-	-
18138	CLCN6	NM_021736.1	967	ttggcgagtttaagagctcttaga	263444	-	channel、	-	-
18139	CLCN7	NM_001287.3	1992	gcgacacggcggtccaatcacaaac	263463	-	signal transduction	-	-
18140	CLCNKA	NM_004070.2	1896	gtgaacctgaagctattctcaga	263466	-	voltage-gated chloride channel	-	-
18141	CLIC2	NM_001289.3	762	ctggctgattgtagctgttacc	263496	-	voltage-gated chloride channel	-	-
18142	CLIC4	NM_013943.1	910	aggaggttgaaatagcatatagt	263513	-	voltage-gated chloride channel	-	-
18143	CLIC5	NM_016929.1	431	aaggatcgtgttcaatgtcacc	263517	-	voltage-gated chloride channel	-	-
18144	CLIC6	NM_053277.1	2017	gagattgaacacgcatattcaga	263550	-	see also 9489 line	-	-
18145	LGICZ	NM_180990.2	258	tggacatctcgcgatacacaaatg	263552	-	channel	-	-
18146	FXYD1	NM_005031.3	176	aggaaacagaccgcgttcacttac	263565	-	channel	-	-
18147	FLJ12770	NM_032174.3	825	ctgggtagctacattgaatgtgg	263579	-	receptor_activity、	-	-
18148	VDAC1	NM_003374.1	295	gggtacggcctgaagtttacaga	263589	-	channel	-	-
18149	VDAC3	NM_005682.3	230	ctggatcgtttacactgatata	263591	-	voltage-dependent anion channel deficiency(電 圧駆動性陰イオンチャネル欠損症)	-	-
18150	AQP7	NM_001170.1	453	acgcagctgtgacctttgttaac	263611	-	channel	-	-
						-	water channel	-	-



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18151	FXVD6	NM_022003.1	218	ttggatcctccttctcctaagt	263613	-	channel	ion channel	-
18152	FXVD7	NM_022006.1	257	ctgagagcccaacctgcaatcc	263616	-	channel	ion channel	-
18153	MLC1	NM_015166.2	1294	gagagcgtgctgctgcaaatgg	263636	-	see also 6260 line		
18154	TM4SF11	NM_015993.1	133	cagagctccgtcgaaagttagc	263638	-	-	ion channel	-
18155	CX36	NM_020660.1	634	gggttcctctgtggccaatattt	263653	-	-	-	-
18156	CX40.1	NM_153368.1	330	cagcgggagtcgccaatgttg	263662	-	-	-	-
18157	CX62	NM_032602.1	450	agagatctctctgctgactattg	263678	-	-	-	-
18158	GJA1	NM_000165.2	607	aagttcaagtagcaggtattgaaga	263714	-	kinase related	ion transporter	visceroatrial heterotaxia(内臓錯位症)
18159	GJA12	NM_020435.1	165	acgagcagcgaagttcaacttcg	263735	-	-	-	-
18160	GJA5	NM_005266.4	1050	aggtttcatccaggttcgtattg	263746	-	-	-	-
18161	GJB1	NM_000166.2	158	gtggcgtgaacccggcattctact	263774	-	see also 136 line	-	-
18162	GJB2	NM_004004.2	335	atgagcagcggcagctttgctgc	263788	-	-	connexon channel	deafness(聾)
18163	GJB4	NM_153212.1	857	tggatgcaggtgggtatccataa	263803	-	-	connexon channel	erythrokeratoderma variabilis(変異性紅斑角皮)
18164	GJB5	NM_005268.2	245	aaggacttcgactgcaatactcg	263804	-	-	connexon channel	-
18165	GJE1	NM_181538.1	254	ctgtaccagcggcccttatatg	263811	-	-	-	-
18166	AQP4	NM_001650.3	599	atgtcaactggctcaatagctta	263824	-	see also 1093 line	-	-
18167	AQP5	NM_001651.1	1218	ggcgtgtggccatcatcaaaagg	263845	-	-	water channel	-
18168	AQP6	NM_001652.2	381	ttggcgtgcaggcttggaaagc	263846	-	-	-	-
18169	AQP8	NM_001169.1	803	ttgttagactgctcatcattaggtgc	263859	-	-	water channel	-
18170	AQP9	NM_020980.2	377	ttggcgaogttcatcttgattgt	263862	-	-	water channel	-
18171	SLC14A1	NM_015865.1	772	ctggtcatactataactacagc	263887	-	-	urea transporter	urea transport defect(尿素輸送障害症)、 diabetes(糖尿病)
18172	AQP1	NM_000385.3	821	tggatgcaggaacatacaactcc	263908	-	-	-	-
18173	AQP10	NM_080429.2	223	tggctctctggccgttaactag	263909	-	-	transporter	-
18174	FLJ20130	NM_017681.1	445	ttggagaccatacatgattgaga	263930	-	-	-	-
18175	LOC12940	NM_138285.2	721	atgcataattgattcaactataa	263958	-	-	-	-
18176	NUP214	NM_005085.2	1198	atgggagttgtctgtagactatc	264002	-	-	-	leukemia(白血病)
18177	NUP50	NM_007172.2	1256	ggcgcacaagtcctcatttaat	264090	-	-	-	-
18178	NUP54	NM_017426.2	662	tagttgcatgccagtaataaag	264101	-	-	-	-
18179	PCNT1	NM_024844.2	1494	atgaagcgcgtccgacaacaatcg	264189	-	-	-	-
18180	SYNPR	NM_144642.3	509	aggactgtctgacgtcaaaagtig	264205	-	-	-	-
18181	MAL	NM_002371.2	484	atgcgtgtctcttcttaatoaga	264222	-	signal transduction	-	leukemia(白血病)
18182	STEAP	NM_012449.2	992	gggcacaatacacgcgattgattt	264226	-	-	channel/pore class transporter	Ewing's sarcoma(ユーンイング肉腫)
18183	ATP6V0A2	NM_012463.1	187	tagagcgaattattgggtatttg	264237	-	-	hydrogen- transporting two- sector ATPase	-
18184	C10orf26	NM_017787.2	885	aggtgactcgggcattgaagtgt	264291	-	-	-	-
18185	C14orf4	NM_024496.2	3230	ggcgaaatcgggactatcttag	264310	-	-	-	-
18186	C14orf52	NM_145165.1	389	ctgtgaccccccgaacaatgact	264328	-	transcription_regulat or	-	-
18187	C5orf12	NM_178276.2	728	ctgttgacgctcatcattgattc	264338	-	-	-	-
18188	CYC1	NM_001916.2	335	cagaggggtttccagggtataaa	264400	-	-	electron	-
18189	DEGS	NM_003676.2	120	ccgcgtctcgggggaagacttcg	264408	-	-	-	-

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18190	DISP1	NM_032890.2	4362	gtgttgagaccccgagataaac	264553	-	see also 9337 line	-	-
18191	DKFZp434 F054	NM_032259.1	965	gcgcaagccttcgctaacciga	264565	-	-	-	-
18192	DKFZp564 D0478	NM_032125.1	444	cagcaacaactggaatatgtga	264583	-	see also 9078 line	-	-
18193	EHZF	NM_015461.1	316	ttgaatcgctgagcgatatcaca	264590	-	see also 6424 line	-	-
18194	ERdj5	NM_018981.1	2635	caggcctatccaactgttaaat	264753	-	see also 7636 line	-	-
18195	ETFA	NM_000126.1	58	caagtagccctggtaatactga	264763	-	see also 99 line	-	-
18196	FBLP-1	NM_017556.1	951	ccggcagaaccttgagaaagg	264785	-	-	-	-
18197	FLJ10900	NM_018264.1	2073	atgtgaacacgaacactctaatt	264794	-	-	-	-
18198	FLJ12519	NM_032168.1	95	gtggcgagcagagtggaacttt	264797	-	-	-	-
18199	FLJ14627	NM_032814.1	1268	cggggctctgctgcttctaca	264874	-	-	-	-
18200	FLJ14768	NM_032836.1	783	gcgctcgagcgcgacttcaacg	264877	-	-	-	-
18201	FLJ20095	NM_017666.1	2230	tagatcgtaggctaacaactta	264937	-	-	-	-
18202	FLJ20511	NM_017853.1	401	ctgcagctagatgatatcttc	264947	-	-	-	-
18203	FLJ22625	NM_024715.2	1726	ggagagtattcgggtgctaattcc	264976	-	-	-	-
18204	FLJ23537	NM_024889.2	443	ctgttgcaattgtctatatatta	264988	-	-	-	-
18205	FLJ25369	NM_152670.1	630	tagtcaagggtcccatcttgaaac	265003	-	-	-	-
18206	FLJ31384	NM_152472.1	1138	tgttaagcgtcacaactcaactga	265009	-	-	-	-
18207	FLJ40417	NM_173650.1	593	cgtatcatcccgacaagaatcc	265016	-	-	redox-active disulfide bond electron carrier	-
18208	GLRX	NM_002064.1	255	aggcggatgcagtgatctagtct	265033	-	-	apoptosis, transcription_regulat or,	-
18209	GLRX2	NM_016066.3	654	cagatccaagaacaattctga	265038	-	-	-	-
18210	HCA127	NM_018684.1	214	aaggcaccctgaaggatacaagc	265043	-	-	-	-
18211	HECA	NM_016217.1	1545	aagccgctcgagacatgatgaga	265060	-	-	cell cycle	-
18212	KIAA0528	NM_014802.1	949	acggcgtgtactctggataaatt	265093	-	see also 5996 line	-	-
18213	KIAA1441	NM_020832.1	3123	aggcgcctatgcagggttaatca	265189	-	see also 7985 line	-	-
18214	KIAA1573	NM_020925.1	3443	aagtcctactcgttgatgacatgg	265247	-	see also 8033 line	-	-
18215	LOC15248	NM_178835.2	453	gtggagtcctcccgtaaacgttgg	265264	-	-	-	-
18216	LOC20447	NM_174924.1	1201	ccgggtcacagaggctcgatacc	265320	-	-	-	-
18217	LOC51061	NM_015914.2	766	ggatctcgggtacttgagttc	265353	-	see also 6568 line	-	-
18218	LOC51066	NM_015931.1	722	atggcgtggcggtgacaagtgc	265392	-	-	-	-
18219	LOC51257	NM_016496.3	869	gtgtcgacacatggtgtttcc	265400	-	-	-	-
18220	LOC90637	NM_182491.1	653	ggaggtcgcccccaccatcaaaag	265409	-	-	-	-
18221	MB	NM_005368.1	288	tgggtggcatccttaagaagaag	265413	-	-	globin	-
18222	MGC14353	NM_032731.2	351	cagtgctacactacttaagtat	265424	-	-	-	-
18223	MGC15482	NM_032875.1	1358	tagccttgagcggatagaactct	265463	-	-	-	-
18224	MGC33414	NM_173574.1	1184	cagaagagcttcaactcaacttgc	265473	-	-	-	-
18225	MGC34648	NM_152660.1	382	aagtatgaccaccctattcttg	265479	-	see also 9910 line	-	-
18226	MGC48332	NM_178450.2	803	ctgggaagcgcgtcggaactgttgc	265496	-	see also 10189 line	-	-
18227	N33	NM_006765.2	1216	aagtaccacggctatctcttag	265527	-	see also 4771 line	-	-

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[illegible]

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18262	RHCG	NM_016321.1	343	cagggtggttccacttcttaca	266494	-	-	-
18263	SLC22A1	NM_003057.2	804	aagaacgggtgcgcatgtacc	266519	-	-	-
18264	SLC22A13	NM_004256.1	868	aggatggacgaggcgatacaact	266549	-	-	-
18265	SLC22A14	NM_004803.2	1106	acgcgcaagtgtgaacaagaag	266561	-	-	-
18266	SLC22A2	NM_003058.2	1621	tgtctaccgctcactaatac	266593	-	-	-
18267	SLC22A3	NM_021977.2	1152	aggggcaacctctatagact	266617	-	see also 8237 line	-
18268	BA108L7.2	NM_030971.2	1011	cagcgttgaagtgtctactaca	266642	-	-	-
18269	DKFZP434						see also 9084 line	
18270	DKFZp547							
18270	M236	NM_018713.1	1205	ctgagtgaccacggacaaaagtct	266698	-	-	-
18271	SFXN1	NM_022754.4	1006	ttgcgacgcgtgtacttaataa	266729	-	cation transporter	-
18272	SFXN2	NM_178858.3	720	ctgcagctaaactgtgtcaatac	266737	-	-	-
18273	SFXN4	NM_178867.2	409	ggcggagcagctgtcttcttaac	266750	-	-	-
18274	SLC30A1	NM_021194.1	1262	ttgctagtgtaggctctaaatac	266800	-	see also 8132 line	-
18275	SLC30A2	NM_032513.2	475	cagagaagctgtgagatcttgg	266809	-	-	-
18276	SLC30A5	NM_022902.2	269	acgtaccacgcctcogattaaca	266814	-	see also 8527 line	-
18277	SLC30A6	NM_017964.2	185	atgtgtgcagcttactaataag	266896	-	-	-
18278	SLC30A8	NM_173851.1	559	gcggccaacattgtactaactgt	266932	-	-	-
18279	SLC41A1	NM_173854.3	1922	ctgtctcaagcctgtgattaat	266958	-	-	-
18280	MRS2L	NM_020662.1	611	ggagaggctcaactgtttacatac	266973	-	-	-
18281	SLC39A11	NM_139177.2	171	cagctctctgtctgtcttctct	266995	-	-	-
18282	SLC39A12	NM_152725.1	1714	aagcattagatttgatgaatc	267036	-	-	-
18283	SLC39A13	NM_152264.2	1108	ctgtgcggcgcctgtgtaattgg	267050	-	-	-
18284	SLC39A3	NM_144564.3	567	ggcgcagcagctcggagatgaga	267056	-	-	-
18285	SLC39A4	NM_017767.1	1736	ggcgcagcgcctgcacaactcgc	267058	-	-	-
18286	SLC39A5	NM_173596.1	876	tggggatgcactgtacatctgc	267061	-	-	-
18287	SLC39A6	NM_012319.2	2273	atgtgacgcgtgggggtatttct	267118	-	-	-
18288	SLC39A7	NM_006979.1	815	ccggcctcgtctctacttcaaga	267129	-	see also 4873 line	-
18289	SLC39A8	NM_022154.4	1378	gggacgattgcctggatgataac	267156	-	-	-
18290	SLC39A9	NM_018375.2	747	ctggcttagagcggcaatcgaatc	267182	-	-	-
18291	SLC22A6	NM_004790.3	1634	ctgtatactggggaactgtatcc	267199	-	see also 3325 line	-
18292	SLC22A8	NM_004254.2	839	tggcgttggctgcagtaactgt	267206	-	-	-
18293	SLC01A2	NM_005075.2	457	ctgcatagacctataatgatgg	267224	-	-	-
18294	SLC01B3	NM_019844.1	107	aagacactgtcaatggattcaaga	267287	-	-	-
18295	DKFZp761							
18295	H039	NM_018711.1	1637	ctgactctggcagtttaccgtgg	267339	-	-	-
18296	PLP2	NM_002668.1	157	ctgttctgagattatattatg	267341	-	ion transporter	-
18297	SLC22A5	NM_003060.2	1476	ctgttaccacacagactgtatta	267371	-	ion transporter	carnitine deficiency(カルニチン欠乏症)
18298	AP1B1	NM_001127.2	517	ctgcctccgcgtgtgacaagatac	267379	-	see also 715 line	-
18299	AP1G1	NM_001128.4	2703	atcggatcaagcttaccatataa	267467	-	see also 719 line	-
18300	AP1G2	NM_003917.2	1297	cagtgcaggaagcattaggtatg	267476	-	-	-
18301	AP1M1	NM_032493.2	585	cgtccgaaggcctcaagatcgc	267494	-	see also 9221 line	-
18302	AP1M2	NM_005498.3	1100	acgtctgatttggagatttaag	267525	-	protein transporter	-

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18303	AP1S1	NM_001283.2	30	atgctcggttcctgctattatt	267532	-	-	-
18304	AP1S3	NM_178814.2	325	gagctctgacgttagagattgt	267544	-	-	protein transporter
18305	AP2A1	NM_014203.2	1594	gtgctacgtgtgctacagatcg	267554	-	see also 5535 line	-
18306	AP3B1	NM_003664.3	1143	gtcgtttactctgtagcaatag	267596	-	see also 2480 line	-
18307	AP3B2	NM_004644.3	1588	cagagtcagtgctcgtcgttaag	267695	-	-	protein transporter
18308	AP3D1	NM_003938.4	2373	ctgctatgtcagatcagattgt	267732	-	see also 2695 line	-
18309	AP3M1	NM_012095.2	570	gcgtcgggcaggggttaagtaga	267768	-	-	protein transporter
18310	AP3M2	NM_006803.2	159	gtgtcagccgtctctgtttgtga	267794	-	see also 4783 line	-
18311	AP3S1	NM_001284.1	491	gagattgtacacaaattgatgc	267839	-	signal transduction	-
18312	AP3S2	NM_005829.3	533	cagagattctcctggaaacataac	267856	-	-	-
18313	APBA1	NM_001163.2	2574	tggggcaccgggacattgaaatc	267880	-	see also 742 line	-
18314	ARCN1	NM_001655.3	1222	gtgacgtagggggtgctaaagtgg	267908	-	-	protein transporter
18315	BCAP29	NM_018844.1	407	ctggttaogcttattactcaact	267922	-	see also 7600 line	-
18316	BCAP31	NM_005745.5	335	gtgcggaattcgggaagtatga	267932	-	see also 3995 line	-
18317	C14orf163	NM_016106.2	1151	ctgacaataccctaaagctaaaca	267976	-	-	-
18318	C20orf161	NM_033421.2	596	tcgccgttactcggactttgagc	268006	-	-	-
18319	CHS1	NM_000081.1	8421	tgggagactactagtgcatattt	268252	-	see also 51 line	-
18320	COG1	NM_018714.1	1500	gtggcaaacccgggctcagtttgc	268385	-	see also 7575 line	-
18321	COG2	NM_007357.1	753	cagacgtctgacgtcgatataat	268428	-	-	protein transporter
18322	COG3	NM_031431.2	1557	ctggcatatccgataagattagt	268515	-	see also 9018 line	-
18323	COG4	NM_015386.1	2163	ctggaccatccgagacaagatttg	268583	-	see also 6403 line	-
18324	COG5	NM_006348.2	1807	aagttgcaccaatcagtaacaaa	268648	-	-	-
18325	COG7	NM_153603.1	931	cagcttaccgggactctatgatgc	268779	-	-	-
18326	COG8	NM_032382.2	1459	atgcccttgccaaagtaactaaa	268813	-	-	-
18327	COPB	NM_016451.3	3063	ctgctgttaccgggcatataaga	268902	-	see also 6862 line	-
18328	COPE	NM_007263.3	152	aggcgcgaagcgggtgaagctatca	268910	-	-	protein transporter
18329	COPG	NM_016128.3	717	atgaccgcctagccgtcaataag	268930	-	-	protein transporter
18330	COPG2	NM_012133.1	1190	tgtgtgtgtgtacaggcaattagt	268968	-	-	-
18331	COPZ1	NM_016057.1	462	tgtatcacccgggttagcattaaag	268999	-	-	protein transporter
18332	COPZ2	NM_016429.1	352	ggcctaatctctacagaaatagc	269004	-	-	protein transporter
18333	E1F4ENIF1	NM_019843.2	1181	cagaactcgggggaattactttgc	269030	-	see also 7733 line	-
18334	EPIM	NM_001980.2	493	cagtgatattcgggatacgaaga	269075	-	signal transduction	-
18335	EXO70	NM_015219.1	1383	gcggctgctaagcacctatatct	269110	-	-	-
18336	GGA1	NM_013365.2	43	ctggaggcgcgaatacaatagagc	269121	-	-	protein transporter
18337	GOSR2	NM_004287.2	406	tggacgaatacactgcagtttaac	269138	-	-	-
18338	IP011	NM_016336.3	1096	aggcgttacattgaacgattca	269166	-	see also 6816 line	-
18339	IP013	NM_014652.1	1662	ctggcactctgcaacatgattat	269238	-	see also 5824 line	-
18340	IP09	NM_018085.3	1759	ctgtgcatcgtttgtacagttaga	269294	-	-	-
18341	KPNA4	NM_002268.3	1595	tagtactgatgactaaagtaat	269352	-	see also 1456 line	-
18342	KPNA5	NM_002269.2	207	gagatgcgtagacgaaggaaga	269364	-	-	protein transporter
18343	KPNA6	NM_012316.3	675	ttgcgcgattacgttgtgaact	269415	-	see also 5272 line	-
18344	MTX1	NM_002455.2	632	ctgacatctccagatttactagg	269435	-	-	protein transporter
18345	MTX2	NM_006554.1	435	atgtgggaaatcaagtagtaca	269451	-	see also 4592 line	-
18346	NAPG	NM_003826.1	428	gagcagactgggaagcttataga	269493	-	-	lyase

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18347	NUP37	NM_024057.2	427	aggccataccgatttcattat	269528	-	see also 8580 line
18348	NUP98	NM_005387.3	1270	ttggcaatacaagacttactaca	269566	-	see also 3753 line
18349	NUTF2	NM_005796.1	457	aggctgcctgcacaaactttgg	269693	-	protein transporter
18350	NXT2	NM_018698.3	389	tgacaagccacacttaattgg	269700	-	protein transporter
18351	PEX13	NM_002618.1	624	cagcgatgttaggtttaagaag	269731	-	see also 1696 line
18352	PIGR	NM_002644.2	2183	acgtgacocgatttcaatcaga	269785	-	protein transporter
18353	SCAMP1	NM_004866.3	448	tcgtcgggaagcagaatgcaaa	269803	-	-
18354	SCAMP2	NM_005697.3	752	ttgtcaaataggatctacatca	269844	-	protein transporter
18355	SCAMP3	NM_005698.2	713	atggagatcccccaagaatttca	269852	-	-
18356	SEC10L1	NM_006544.2	1146	aagtcgagtcagagcaaatatct	269880	-	-
18357	SEC13L1	NM_030673.2	890	atgatccctcaagcaatactgg	269912	-	-
18358	SEC15L1	NM_019053.2	181	ttgtatcgtatcatcacaaagg	269918	-	see also 7677 line
18359	SEC23A	NM_006364.2	2143	tagctttctgcagatcgtattc	270035	-	see also 4461 line
18360	SEC23B	NM_006363.3	1901	ctgatgagtcgtcatattacaga	270091	-	see also 4458 line
18361	SEC24B	NM_006323.1	3434	acggctggatgatcgtgtatatg	270221	-	protein transporter
18362	SEC24D	NM_014822.1	219	gtggctacacctccgattcttca	270236	-	protein transporter
18363	SEC3	NM_018261.2	2699	atgaatttatacccgagttataag	270363	-	-
18364	SEC6	NM_007277.3	1759	atgacgaagaagtggtctattagg	270463	-	-
18365	SEC63	NM_007214.2	927	aagcagacccaacggataatttc	270494	-	see also 5021 line
18366	SNAG1	NM_052870.1	1823	tagggatgtgagtactcttctcgc	270516	-	protein transporter
18367	SNAP23	NM_003825.2	122	cagagagctcacagattactaga	270519	-	-
18368	SNAP29	NM_004782.2	692	tcgagcctatcacagagagatcg	270536	-	receptor activity
18369	SNX1	NM_003099.2	1381	ggagtctgggtgactcaatatga	270560	-	-
18370	SNX10	NM_013322.2	317	atgtattcatactaatagcatgt	270570	-	protein transporter
18371	SNX11	NM_013323.2	713	atgccattctgatgatctatg	270576	-	-
18372	SNX12	NM_013346.2	324	ggagatagtagcaagatgtgtgtac	270587	-	protein transporter
18373	SNX15	NM_013306.2	657	gggtacacccaggtacaaaagtaa	270591	-	-
18374	SNX16	NM_022133.2	1020	caggggcattctgtgaacttttag	270618	-	see also 8298 line
18375	SNX19	NM_014738.1	1221	tgtaccggacggccatgtagtgg	270638	-	protein transporter
18376	SNX2	NM_003100.2	401	atgtctgtctccgtgtctttga	270685	-	see also 2081 line
18377	SNX24	NM_014035.1	106	gcggggatcacacgggttttaaga	270714	-	see also 5466 line
18378	SNX26	NM_052948.2	368	ccggttctccggaggttaccgata	270727	-	protein transporter
18379	SNX27	NM_030918.4	456	agacactgttggacacaatcattt	270746	-	protein transporter
18380	SNX4	NM_003794.2	494	tgagagcgcagcggttggttta	270808	-	protein transporter
18381	SNX5	NM_014426.2	554	cagtaagatcgcgaactttcatg	270848	-	see also 5673 line
18382	SNX8	NM_013321.1	356	toggatcacagaggttcaatga	270856	-	protein transporter
18383	STX10	NM_003765.1	348	ggaggaataacagagagatactcg	270875	-	protein transporter
18384	STX11	NM_003764.2	202	ctggacttgcgaagcaataga	270877	-	receptor activity
18385	STX12	NM_177424.1	689	gggtatctgattgtatagcatag	270890	-	see also 10162 line
18386	STX16	NM_003763.2	909	agggaatttagggcgatgttgtt	270907	-	t-SNARE
18387	STX18	NM_016930.2	930	cagcattoaccaggttagttgttg	270931	-	protein transporter
18388	STX1A	NM_004603.1	710	gtggaacacgggttagactatgt	270936	-	protein transporter
18389	STX3A	NM_004177.3	638	cagcggcagctcgaattacttgg	270948	-	see also 2804 line
18390	STX4A	NM_004604.3	858	cagcttgaaacaggtattctga	270970	-	protein transporter

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18391	STX5A	NM_003184.2	394	ctgtccgacacgcagtggaattc	270974	-	see also 2138 line		
18392	STX7	NM_003589.1	428	gagtttctgctgagtaagc	270990	-	-	protein transporter	-
18393	STXBP1	NM_003165.1	271	atgaccgagggcacaacgattgt	270998	-	-	-	-
18394	STXBP3	NM_007269.1	921	tagaattcgacatcgacatattg	271058	-	see also 5067 line	-	-
18395	SYBL1	NM_005638.3	667	aagaacctoaagctoaattatt	271113	-	see also 3909 line	-	-
18396	TLOC1	NM_003262.2	834	caggagctctggttgactact	271125	-	see also 2210 line	-	-
18397	TOM1	NM_005488.1	947	ctgcccacgaacgggttgaacg	271145	-	-	-	-
18398	TOM1L1	NM_005486.1	678	ggagtgatgtcgcccatattga	271173	-	-	-	-
18399	VDP	NM_003715.1	1258	aagaccggcaattgtagtacttc	271256	-	see also 2538 line	-	-
18400	VPS18	NM_080432.1	884	cgcgcattgtactgtctaaatg	271311	-	see also 9514 line	-	-
18401	VPS3A	NM_022916.2	1674	ggcgtaaccttcgctgaattg	271372	-	-	-	-
18402	VPS39	NM_015289.1	2726	tggagtggtgtgctcattactct	271471	-	-	-	-
18403	VPS45A	NM_007259.2	501	gggatccagccagctatctaga	271488	-	see also 5062 line	-	-
18404	VT11A	NM_145206.1	458	ggggcacatctgtcgtataaca	271526	-	-	-	-
18405	XPO1	NM_003400.2	2466	aagttaggggacataaacagc	271622	-	see also 2294 line	-	-
18406	XPO4	NM_022459.3	2272	cagcattcttaagagtgataaa	271721	-	see also 8382 line	-	-
18407	CTNS	NM_004937.1	699	cagccattagcagcacaacc	271784	-	see also 3433 line	-	-
18408	XK	NM_021083.2	536	ctgaccctacagctgtacataag	271797	-	see also 8082 line	-	-
18409	PITPNC1	NM_012417.2	1320	aagccatgtcggcccaaatctga	271841	-	signal transduction	-	-
18410	APOA2	NM_001643.1	294	ctggaaagggaactggttaacttc	271852	-	-	Hepatocyte nuclear factor 1	familial hypercholesterolemia(家族性高コレステロール血症)、apolipoprotein A-II deficiency(アポリポタンノバクA-II欠損症)
18411	APOC3	NM_000040.1	268	ggacaccgttaaggacaaattct	271857	-	-	Nuclear factor NF-kappa-B p50 subunit	-
18412	APOC4	NM_001646.1	235	cagagacgggtggcaaatggtct	271859	-	-	-	Alzheimer disease(アルツハイマー病)
18413	APOL1	NM_003661.2	1207	tagtctacctgtgtacgaatca	271879	-	-	-	schizophrenia(精神分裂病)
18414	APOL3	NM_014349.2	746	aagaagcttagaacaatagcagc	271881	-	kinase related	-	schizophrenia(精神分裂病)
18415	APOL6	NM_030641.2	1198	gggtggggaaggatttaactgg	271905	-	-	-	schizophrenia(精神分裂病)
18416	FHR-4	NM_006684.1	565	gggtaattggcatcggttgaagc	271918	-	-	C-ets-1 protein	-
18417	SAA4	NM_008512.1	185	gggcctattgggacataatgata	271923	-	-	-	-
18418	SLC02A1	NM_005630.1	1424	ctgctgtgcccagattctatct	271951	-	-	lipid transporter	amyloidosis(アミロイド症)
18419	SLC18A1	NM_003053.1	828	tgggacctatacttactctttg	271972	-	see also 2047 line	-	-
18420	SLC18A2	NM_003054.1	1514	tggatcacacaactccctattaaa	272008	-	see also 2048 line	-	-
18421	CTL1	NM_022109.2	1292	cagtaaatcgccctatttggttac	272051	-	see also 8271 line	-	-
18422	SLC5A7	NM_021815.2	385	ggcgccagcagcccatcatagt	272074	-	-	-	-
18423	SLC35B1	NM_005827.1	594	cggctatggagagctactctgc	272132	-	see also 8176 line	-	-
18424	SLC35A5	NM_017945.2	1103	ggggagtaaacgctgacagatta	272166	-	-	-	-
18425	SLC35B4	NM_032826.2	489	aaggctactgcccataatggtga	272175	-	see also 9294 line	-	-
18426	NUP107	NM_020401.1	2340	atgtatccgagaaactttgtgc	272254	-	-	nucleocytoplasmic transporter	-
18427	NUP155	NM_004298.2	1666	gggctactcgggctttcttagg	272315	-	-	-	-
18428	UPF3A	NM_023011.2	870	aagtaagattgaagcttcttaag	272412	-	-	-	-
18429	UPF3B	NM_023010.2	234	gttgtaattgaagattacctcc	272419	-	-	-	-

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18430	CHAC	NM_015186.1	6547	aagatgtgttgaggattaccatcac	272653	-	see also 6271 line	-	
18431	KJAA1012	NM_014939.1	1753	tggcagcccatgatttagtaa	272806	-	see also 6121 line	-	
18432	VPS41	NM_014396.2	573	ctgattgcttgggccaataat	272895	-	see also 5661 line	-	
18433	DEFA4	NM_001925.1	161	cagaagaccaggacatatctatt	272938	-	-	calcium channel regulator	-
18434	PLN	NM_002667.2	301	atgtctcttctgctgctgtatca	272945	-	phosphatase	calcium channel regulator	-
18435	CLNS1A	NM_001293.1	746	gtggataccacaccacacagttgc	272953	-	-	auxiliary transport protein	-
18436	CYGB	NM_134268.3	514	tggaaaccggtgtacttcaagatc	272962	-	-	globin	-
18437	HBH	NM_000518.4	386	ctgtgtctgtggcccatcactttg	272964	-	-	specific RNA polymerase II	-
18438	HBE1	NM_005330.3	573	tgggtaacgtgatgggtatt	272969	-	-	transcription factor	-
18439	HBQ1	NM_005331.3	264	ccggcaacgaagaccttctctcc	272971	-	-	zinc binding	-
18440	HBZ	NM_005332.2	68	aagaactgagagagaccatcattgt	272972	-	-	globin	-
18441	NGB	NM_021257.2	574	aaggtgatgctcgtgatgtatgc	272973	-	-	Smad3/Sp-1 heterodimer	-
18442	SORT1	NM_002959.3	1308	aagcgtgctctcgaagataatt	273007	-	see also 1996 line	-	-
18443	TETRA	NM_001120.2	493	atgggtgtggccacctcatatgc	273039	-	-	-	-
18444	SLC29A1	NM_004955.1	614	aagatcgtgctcattattcatt	273048	-	see also 3445 line	-	-
18445	SLC29A2	NM_001532.2	862	gagcctgctcaccctgaagtttg	273057	-	-	nucleoside transporter	-
18446	SLC33A1	NM_004733.2	770	atcggtctacgttaagaacttc	273068	-	see also 3250 line	-	-
18447	AP2B1	NM_001282.1	674	gggatctcatagcagattcaaat	273113	-	-	-	-
18448	AP2M1	NM_004088.2	618	ggcgagagaggtatcaagtatc	273148	-	-	-	-
18449	AP2S1	NM_004089.2	189	cgctccgagacgccaaacacacc	273162	-	-	-	-
18450	AP4B1	NM_006594.1	588	ctgcgggataaggcttcattatgt	273180	-	see also 4625 line	-	-
18451	AP4M1	NM_004722.2	897	aggaatccgggtcgtgaagtct	273247	-	-	-	-
18452	AP4S1	NM_007077.2	457	cagccgagtgatgaattagatg	273267	-	-	-	-
18453	AQP3	NM_004925.3	560	aggcacagccctcccttatctgt	273280	-	-	transporter	-
18454	C16orf7	NM_004913.1	139	ctgggtgtatctcagagataagc	273282	-	transcription_regulat or	-	-
18455	C20orf121	NM_024331.2	379	ccgagcccgcaagtttgattacg	273289	-	see also 8611 line	-	-
18456	C20orf26	NM_015585.2	2000	aaggatccgatgagttatgcttt	273355	-	-	-	-
18457	C20orf59	NM_022082.2	1347	gtgtctaggcgggtacttctgt	273408	-	-	-	-
18458	CLCA3	NM_004921.1	576	atgtccactcgtattactgttt	273428	-	-	-	-
18459	GPNE7	NM_014427.3	439	ctgtcagagagacatttctctgg	273435	-	-	-	-
18460	EVER1	NM_007267.5	1841	gggaactgtgtggaggattatc	273500	-	-	-	-
18461	FLJ14153	NM_022736.1	609	atgctgtattcttaagattgaag	273523	-	see also 8442 line	-	-
18462	FLJ25217	NM_152351.2	1020	gtgtccgtctctcgaacagatga	273538	-	-	-	-
18463	FLJ40121	NM_175904.2	1203	ctgaggggtcccaacagtcacc	273573	-	-	-	-
18464	GASP	NM_014710.1	2037	ggcgtatgggtgattcttatt	273619	-	-	-	-
18465	GOLGA3	NM_005895.2	689	cagtgtccgaggttaacagagc	273653	-	see also 4098 line	-	-



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18466	HIATL2	NM_032318.1	410	atgttgactgttctacatgaac	273699	-	-	-
18467	JUB	NM_032876.4	1829	atggaccgggattatcatttga	273703	-	see also 9330 line	-
18468	LCN2	NM_005564.2	254	tggcagggaatgaattctcaga	273705	-	transporter	-
18469	LG3	NM_139278.1	1574	gggcaagccacagcgtgattgtg	273730	-	-	-
18470	LOC12726	NM_182792.2	363	gggtggatcacttggacaatga	273736	-	-	-
18471	LOC13630	NM_174959.1	724	aagacggctgagcccttctatta	273759	-	-	-
18472	LOC13830	NM_178469.2	536	aagatcgtgggctcagaataaga	273772	-	-	-
18473	LOC14342	NM_175733.2	1171	aggtctctcgtcatgaactaat	273794	-	-	-
18474	MGC11308	NM_032889.2	629	cagccttgagcgcctgtatctc	273815	-	-	-
18475	MGC34646	NM_173519.1	811	aagatccggagcttcagataaat	273884	-	-	-
18476	MGC34821	NM_173586.1	948	gggttgacggagaagatcatatgc	273906	-	-	-
18477	MGC52019	NM_178498.2	941	atggatctgactacatatattt	273936	-	-	-
18478	MGC9564	NM_080669.2	751	ctgatagcatgactctctatgc	273957	-	see also 9520 line	-
18479	MIP	NM_012064.1	720	cggctcaagagatttctgaga	273970	-	see also 5103 line	-
18480	MTAC2D1	NM_152332.2	1058	aagttccaaagctattgaattt	274002	-	-	-
18481	NOD3	NM_178844.1	1600	gtggcagcgcgcgtattactagg	274022	-	-	-
18482	NUP88	NM_002532.3	708	agggcgatataccgcatctctagg	274058	-	see also 1630 line	-
18483	ORM1	NM_000607.1	338	aggacagtgcatctataacacc	274098	-	transporter	-
18484	PACSIN2	NM_007229.1	1399	ctggcagcagcagtgactaaca	274101	-	-	-
18485	PDZK1	NM_002614.3	157	tggcttctctcgcgaattgaga	274104	-	see also 1690 line	-
18486	PPP1R9B	NM_032595.1	1764	ggcgaagtggcccgactaattc	274126	-	phosphatase, cell_cycle	-
18487	SLC13A5	NM_177550.2	1652	ggggacggggccattattgacttg	274179	-	-	-
18488	SLC15A3	NM_016582.1	1839	ttgcggatggacatctactct	274185	-	-	-
18489	SLC17A6	NM_020346.1	1615	tgtctgttgctattctcact	274218	-	-	-
18490	SLC17A8	NM_139319.1	890	tgggggtgtggcagctacattg	274247	-	-	-
18491	SLC22A12	NM_144585.2	953	ctgagccctctcgtctattcc	274276	-	-	-
18492	SLC22A15	NM_018420.1	1570	ttgcgggagaccccttaacagctc	274312	-	-	-
18493	SLC22A16	NM_033125.2	1012	caggcgcaagctctcgtaaactgt	274332	-	-	-
18494	SLC22A17	NM_016609.2	191	ggattctctaacgagaatgatca	274352	-	see also 6950 line	-
18495	SLC22A9	NM_080866.1	745	aggcatccttagggcgctatttat	274361	-	-	-
18496	SLC23A3	NM_144712.2	1008	tggggcgaataatctctcattgtgg	274380	-	-	-
18497	SLC37A3	NM_032295.1	1218	gtgttatctcgcattaatagt	274428	-	see also 9147 line	-
18498	SLC5A8	NM_145913.2	1559	tggctgctgctggcgtcacttatg	274462	-	see also 9804 line	-
18499	SLC01G1	NM_017435.2	1189	tgtgtgcttggctctactaatagc	274508	-	-	-
18500	SLC02B1	NM_007256.1	2173	ggactgtctgctcactacact	274558	-	transporter	-
18501	SLC03A1	NM_013272.2	700	cgggacggcttaacacatgatgt	274568	-	see also 5383 line	-
18502	SLC04A1	NM_016354.3	979	cagctgctcgcgcctctacattg	274599	-	-	-
18503	SLC04C1	NM_180991.4	360	ggctgcccctcccaatcgaagt	274621	-	-	-
18504	SLC05A1	NM_030958.1	2073	ttgtcctcggaggctacattata	274722	-	see also 8975 line	-
18505	SLC06A1	NM_173488.2	990	gtgcttagagcaccactagttaa	274785	-	-	-
18506	SLMBP	NM_020123.2	1915	gtgtggagcgtattgttacatgg	274876	-	see also 7758 line	-
18507	SPINL	NM_032038.1	489	cggcgttcggctcctcatagtg	274881	-	-	-
18508	SV2A	NM_014849.1	1902	ggagcgcgtagagcagctgaactt	274906	-	-	-

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18509	SV2B	NM_014848.1	605	aggaaatctaggagatgtagtct	274925	-	-	-
18510	SYPL	NM_006754.2	493	tggctacacagatctgtatctgg	274960	-	-	-
18511	SYT11	NM_152280.2	642	aagaactaaggagccctattaca	274988	-	see also 9827 line	-
18512	SYT12	NM_177963.2	662	ggacagatcgtggcattctcog	275002	-	see also 10173 line	-
18513	SYT13	NM_020826.1	913	tgagaaggtcctactatccatca	275013	-	see also 7984 line	-
18514	SYT14	NM_153262.1	906	tggcaagtacacctgttctct	275044	-	see also 9980 line	-
18515	SYT14L	NM_031914.1	750	cagccaaacggcggtattctgaga	275088	-	-	-
18516	SYT2	NM_177402.3	1280	acgaagccatagtagcaagatcttc	275117	-	-	-
18517	SYT3	NM_032298.1	803	tcggctatcgtgacattctggtg	275118	-	see also 9149 line	-
18518	SYT4	NM_020783.2	1255	aggtaatcggcgagtagtcttgg	275149	-	see also 7967 line	-
18519	SYT7	NM_004200.2	716	aggtgtccatccccccttaacaag	275156	-	see also 2811 line	-
18520	SYTL4	NM_080737.1	435	aggattaggcgacataaagaatga	275159	-	see also 9521 line	-
18521	TCOF1	NM_000356.1	2977	ggatccagtcgagatatacagatag	275206	-	transporter	-
18522	TM9SF1	NM_006405.3	131	cggcgaacctgtttctgtatg	275214	-	see also 4487 line	-
18523	TM9SF2	NM_004800.1	981	ggcgctctagatgggactatatt	275277	-	see also 3332 line	-
18524	TM9SF4	NM_014742.1	369	ctgggagtcgcccctatacacttc	275326	-	see also 5939 line	-
18525	CNOT2	NM_014515.1	1536	aagaaagagtagtgattaccagg	275420	-	see also 5729 line	-
18526	GTF2B	NM_001514.2	580	gtgcggtatcacgaattttctaa	275439	-	see also 1042 line	-
18527	GTF2E1	NM_005513.1	94	ttgaagcgggttagccaaagtatt	275452	-	general RNA polymerase II transcription factor	-
18528	GTF2E2	NM_002095.3	1051	acgctttaagactataacgaac	275512	-	see also 1358 line	-
18529	TAF1C	NM_005679.2	1175	gtgcggtgtgaaagtttgtaaa	275525	-	transcription_regulat	-
18530	BLZF1	NM_003666.2	1051	tagaacgtatgtcaatacagtg	275552	-	or	-
18531	CEP1	NM_007018.3	2154	tagaggctcggcctaaacctaaagg	275636	-	see also 2491 line	-
18532	EAP30	NM_007241.2	335	gtggggagacttctattacgaact	275737	-	see also 4897 line	-
18533	ELL2	NM_012081.3	1113	aggaccctctcatataccttaag	275768	-	transcription_regulat	RNA polymerase II
18534	LITAF	NM_004862.1	399	atgaatcctcctctcgtattatc	275781	-	or	transcription factor
18535	SUPT3H	NM_003599.1	372	atgtttatccgagactacaatc	275804	-	transcription_regulat	RNA polymerase II
18536	SURB7	NM_004264.2	340	ctggaggagtggtttatcgagg	275825	-	or	transcription factor
18537	BTF	NM_014739.1	417	ggagattatcgtcgcgattacaga	275912	-	see also 5928 line	-
18538	NAB1	NM_005966.2	1089	aagaacttgagcgtcttagttca	276045	-	transcription_regulat	transcriptional repressor
18539	REST	NM_005612.3	1004	cgcgtcgcggtcacaataacta	276074	-	or	see also 3900 line
18540	ELL	NM_006532.1	438	gagccgaagtgccattgtcatca	276140	-	transcription_regulat	positive transcription elongation factor

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18541	GTF3C3	NM_012086.1	1235	ctgagcggtgccaatagatctc	276182	-	transcription_regulat	-	-
18542	GTF3C5	NM_012087.1	1180	gcgcagcctatggttgctggtg	276257	-	-	-	-
18543	8D6A	NM_016579.1	555	gagctcggctgtggaaccaatga	276268	-	-	-	-
18544	A1BG	NM_130786.2	825	cagccagatcgcatctcttcttc	276274	-	molecular_function	unknown	-
18545	A2LP	NM_007245.2	758	atgttgacttcaactatgctact	276293	-	-	-	-
18546	AAAS	NM_015665.3	198	ctggagcggscagtagctatga	276322	-	see also 6536 line	-	-
18547	ACRBP	NM_032489.2	872	tagagctactctctatgataatg	276345	-	-	-	-
18548	ACTL6	NM_016188.3	1186	gagcatgcgactgaaactcatg	276369	-	see also 6714 line	-	-
18549	AF1Q	NM_006818.2	363	ctgtgagtagccagtagcagttcc	276371	-	molecular_function	unknown	-
18550	AMMECR1	NM_015365.1	956	aaggatggaccatatcacagacc	276384	-	see also 6397 line	-	-
18551	ANGPT4	NM_015985.2	1576	gcgtgcctctgcgatgatgatac	276406	-	kinase related	-	-
18552	ANK3	NM_001149.2	1908	ggggttagccagcgaactgtaca	276445	-	signal_transduction	-	-
18553	ANKRD2	NM_020349.2	1236	ctggaggggcctaagtatagtg	276778	-	transmembrane	receptor protein	-
18554	ANUBL1	NM_174890.1	514	atgcgtggcgaccctataataac	276790	-	-	tyrosine kinase	-
18555	AP2A2	NM_012305.1	669	caggaagtcctcccgatctgttcc	276849	-	-	activator	-
18556	AP0A1BP	NM_144772.1	261	cagcgtggaccacactttagaac	276873	-	-	-	-
18557	ARFIP1	NM_014447.1	192	ttgatgactctctggaacatagc	276887	-	-	structural	-
18558	ARPP-21	NM_016300.3	448	gagaacggcattgttaaatcaga	276916	-	constituent of	muscle	-
18559	ARS2	NM_015908.3	377	gcgcgtagtcggggtgaatc	276970	-	see also 6792 line	-	-
18560	ASB1	NM_016114.3	730	gcgcgaaccccgacttcaactgc	277008	-	see also 6566 line	-	-
18561	ASPCR1	NM_024083.2	265	gagcgtgctgacaccttctctcc	277015	-	molecular_function	unknown	-
18562	AUTS2	NM_015570.1	1114	ggcgcgattgtccccaagatctc	277030	-	-	renal cell carcinoma(腎臓癌)、alveolar soft part	-
18563	B1	NM_014451.2	2717	ttgcctgtcgaagaggttctaagg	277130	-	-	sarcoma(肉状軟部肉腫)、renal tumour(腎腫	-
18564	B7	NM_006992.1	485	ctgcgaagtgcccaagatgaatga	277141	-	-	瘍)、soft tissue sarcoma(軟部組織肉腫)	-
18565	B7H3	NM_025240.1	807	gtgctggagaagatcaaacaga	277148	-	-	-	-
18566	BAL	NM_031458.1	995	tagagactatccgggttagtttg	277167	-	see also 9034 line	-	-
18567	BBS2	NM_031885.2	2344	gagtcgttatatggaaactctatg	277273	-	molecular_function	unknown	diabetes(糖尿病)
18568	BC-2	NM_014453.2	246	cgcgcgagcagacagaactagaga	277288	-	-	-	-
18569	BCLP	NM_033504.2	554	tcgacccacacagcattatagc	277298	-	kinase related	-	-
18570	BENE	NM_005434.3	413	tagccgccacccacacatagatc	277300	-	molecular_function	unknown	-

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18571	BIOD1	NM_001714.1	2524	aagatcgccgagccctaaagtaag	277347	-	see also 1141 line	-	-
18572	BK65A6.2	NM_019601.2	1279	atgtctcagcttcttacttcg	277359	-	-	molecular_function unknown	-
18573	BM-002	NM_016617.1	259	ctcgagattattcttagagatcg	277374	-	-	molecular_function unknown	-
18574	BPESQ1	NM_021812.1	615	cagtccttgggtgatttccttg	277375	-	-	molecular_function unknown	-
18575	BRD3	NM_007371.2	324	ccgtggacgcaatcaaatgaac	277379	-	-	molecular_function unknown	-
18576	BRMS1	NM_015399.2	748	tggcccatcatcgtgtacatgc	277398	-	cell_cycle	-	-
18577	BRP44L	NM_016098.1	368	atgccacgcaacaataagtag	277404	-	-	-	-
18578	BTN2A1	NM_007049.2	1060	aggagttgaaacgggaaacaaga	277409	-	-	-	-
18579	C11orf1	NM_022761.1	182	atggcgtatgcaccactaatgaga	277413	-	see also 8456 line	-	-
18580	C11orf2	NM_013265.2	2078	aagctattcttgaacgtatga	277428	-	-	-	-
18581	C11ORF4	NM_020155.2	1252	tgcctctcgtctactctctt	277431	-	-	-	-
18582	C14orf1	NM_007176.1	442	ggctcgcgtatctagaagtga	277449	-	see also 4982 line	-	-
18583	C14orf123	NM_014169.2	1057	ttggcccgaggttgttaaatgt	277464	-	-	-	-
18584	C15orf2	NM_018958.1	2884	gagccagtcgaggggtcaaatgc	277501	-	-	molecular_function unknown	-
18585	C16orf35	NM_012075.1	927	gggcgtagttcgggttcacatca	277521	-	-	-	-
18586	C16orf5	NM_013399.1	676	gtgtcagaggagagatcttga	277533	-	-	-	-
18587	C17orf1A	NM_031456.2	1384	aagagcgtcgtgtgaacatcc	277564	-	-	molecular_function unknown	-
18588	C18orf1	NM_004338.1	256	tggagttcgcccaaatcactc	277603	-	-	molecular_function unknown	-
18589	C18orf2	NM_031416.1	195	atgacgcaagagacaaattctaag	277615	-	-	-	-
18590	C1orf2	NM_006589.2	1167	ctgtacactctctgtattgtct	277626	-	-	molecular_function unknown	-
18591	C1orf24	NM_022083.1	1579	aaggttaactccgagcttaaa	277645	-	-	-	-
18592	C20orf10	NM_014477.2	643	aagccctaacgcaatagaactcc	277695	-	-	-	-
18593	C21orf45	NM_018944.1	482	atgcacgccccagaatcttgatt	277715	-	-	molecular_function unknown	-
18594	C21orf5	NM_005128.1	4833	tagaaggcttaacgaccattagt	277788	-	-	molecular_function unknown	-
18595	C21orf62	NM_019596.1	733	gggaactcagccttaaatcatata	277846	-	-	molecular_function unknown	-
18596	C22orf23	NM_032561.2	471	gagttctaccttccaagcaataa	277852	-	-	molecular_function unknown	-
18597	C2F	NM_006331.3	269	gtgacaagcacaagtctatatig	277860	-	-	molecular_function unknown	-
18598	C40	NM_017546.3	723	tggcgaagcggcaatctgaattg	277875	-	see also 7025 line	-	-
18599	C6orf11	NM_005452.4	375	aagttctgtcgcattgacaaatc	277918	-	-	molecular_function unknown	-
18600	C6orf15	NM_014070.1	525	cagacagctgccccgttctaatt	277942	-	-	-	-
18601	C6orf53	NM_016462.2	388	tgttaccttggtggcattatgg	277988	-	-	-	-
18602	C6orf54	NM_014354.1	1018	gcggctgtacgcgtcatgtagc	277990	-	-	-	-

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18603	C6orf67	NM_018247.1	372	cgcgagatcgagattgattata	277995	-	see also 7344 line	-	
18604	C7orf30	NM_138446.1	611	atggaccctacgttcttatgatg	278056	-	-	-	
18605	C8orf1	NM_004337.1	869	tagctcgtactactaaacattat	278084	-	see also 2901 line	-	
18606	C8orf2	NM_007175.4	1051	aggggctagctgacaaagctaaagc	278143	-	-	-	Alzheimer disease(アルツハイマー病)
18607	C9orf16	NM_024112.2	129	cagaatacgtgcgcacatcaactcc	278145	-	-	molecular_function unknown	-
18608	C9orf27	NM_021208.1	333	cagggatgtgacctatgaatga	278147	-	-	-	-
18609	C9orf5	NM_032012.1	2565	gtgaftcccaagaattoagttcc	278208	-	-	-	-
18610	CDCA1	NM_031423.2	547	aagcatgcgcgtgaacgtagtatg	278226	-	see also 9017 line	-	-
18611	CDCA3	NM_031299.3	639	cagggtctatgccaataagatgg	278263	-	-	-	-
18612	ODKAL1	NM_017774.1	316	tgggtttgtctcctaataattc	278273	-	-	-	-
18613	GENPH	NM_022909.3	456	tagtgtctcattggataacatga	278313	-	-	-	-
18614	CENPJ	NM_018451.2	4164	cagatcccgatcgggataagagta	278395	-	-	-	-
18615	CER1	NM_005454.1	493	gtcccttcagccagactataaac	278401	-	-	zinc binding	-
18616	CFDP1	NM_006324.1	167	ccgtcgggtggagagtagtagta	278408	-	-	-	-
18617	CG005	NM_014887.1	476	aagcacgtcctccattagtagtcc	278436	-	-	-	-
18618	CGI-51	NM_015380.3	535	gagattaacggggcaggtataaca	278486	-	see also 6402 line	-	-
18619	ch-TOG	NM_014756.1	1776	gagcctgagctctctatagaagt	278551	-	-	molecular_function unknown	-
18620	CHIC2	NM_012110.2	323	tggcagatttcgacgaatcttat	278673	-	see also 5137 line	-	-
18621	CHORDC1	NM_012124.1	175	cggctttccacgatgcattaaa	278687	-	see also 5146 line	-	-
18622	CHRD	NM_003741.2	2177	aagtgacacatagccaaccaatgt	278698	-	-	-	-
18623	GOLGA1	NM_001848.1	831	aagtgtgctgctcttcgaatgc	278712	-	-	molecular_function unknown	Bethlem myopathy(ミオパシー)
18624	CP110	NM_014711.3	2960	ttgtacggtatttcgacattatt	278816	-	see also 5904 line	-	-
18625	GRIP3	NM_006061.1	637	aagtagcagaagatctctatagtaa	278839	-	-	molecular_function unknown	-
18626	GRYPIC	NM_032545.2	286	ttgggaaacagctatacaagaga	278848	-	-	-	double-outlet right ventricle(両大血管右室起始症)、heterotaxy(内臓錯位)、transposition of great arteries(大血管転位症)
18627	CSDUFD1	NM_031919.1	293	gagtcagattagccaatgtaata	278859	-	see also 9052 line	-	-
18628	GSN3	NM_005212.1	264	acgtagaccagctatagcaaita	278872	-	-	molecular_function unknown	-
18629	CSRP2	NM_001321.1	218	tagcacacagtgccaattoacg	278880	-	-	molecular_function unknown	-
18630	CTAG1	NM_001327.1	340	gagccgctgctgagttctacc	278883	-	-	-	melanoma(メラノーマ)
18631	CTAG2	NM_020994.1	652	cagaggtgtgcctttaaattga	278888	-	-	molecular_function unknown	melanoma(メラノーマ)
18632	CTDSP2	NM_005730.2	401	tctggagcgtaaacattctcaagg	278899	-	-	phosphatase	-
18633	CTDSP1	NM_005808.1	516	ctgcttcctgattacaattgg	278912	-	-	molecular_function unknown	-
18634	CTNND1	NM_001331.1	1169	tggttatgtgcacctatgaag	278927	-	see also 884 line	-	-
18635	CUL4B	NM_003588.2	2452	atgggctattggccgacatagt	279054	-	see also 2381 line	-	-

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18636	CXorf1	NM_004709.1	369	tagcatccccactgaactatattc	279069	-	-	molecular_function unknown	-
18637	CXorf2	NM_001586.1	974	aagagagaatggcctatctatcc	279089	-	-	molecular_function unknown	-
18638	CXorf6	NM_005491.1	2085	acgtgtcaccgtctaacattact	279132	-	-	molecular_function unknown	-
18639	CXX1	NM_003928.1	394	tgggagaggtccgtgtgttact	279137	-	-	molecular_function unknown	-
18640	CYR1	NM_052954.1	191	atggaaaccacgcctactgttc	279139	-	-	-	-
18641	DIPA	NM_006848.1	615	tggcctgtcccccgatgattga	279148	-	-	molecular_function unknown	-
18642	DISC1	NM_018662.1	1173	gagacgttacacaagaagattaga	279157	-	-	protein binding	schizophrenia(精神分裂病)
18643	DKFZP434 F091	NM_015453.1	1767	cagtttaacgtttctgatactaca	279211	-	-	-	-
18644	DKFZP434 G1415	NM_031292.1	2082	ttgatgtcttcactgtatgctacc	279266	-	-	-	-
18645	DKFZP564 B167	NM_015415.1	437	tggagtgctgtgtgtgtaattt	279276	-	-	-	-
18646	DKFZP564 C186	NM_015658.1	436	aagggggaagaagaatttgttcc	279280	-	-	molecular_function unknown	-
18647	DKK4	NM_014420.1	745	cggcagcatgctcgtgattaagagt	279293	-	-	signal transduction	-
18648	DLG7	NM_014750.3	1875	aagttgtctcaggtatagcaagt	279339	-	-	see also 5943 line	-
18649	DLGAP1	NM_004746.2	1046	gggtacacccccagaggtaaaga	279371	-	-	protein binding	-
18650	DOC1	NM_014890.1	429	gagacaacagggtctttacgaaa	279406	-	-	-	-
18651	DONSON	NM_017613.2	1635	tgtttcataaggagacttaaac	279502	-	-	see also 7054 line	-
18652	DP1	NM_005669.3	284	ctgacctactgggtagtgtatgg	279506	-	-	molecular_function unknown	-
18653	DSR3	NM_006052.1	315	gtggtcatatcagagtaaggattc	279512	-	-	see also 4213 line	-
18654	DSR4	NM_005867.1	131	atgatgaacccccggatattacc	279532	-	-	molecular_function unknown	-
18655	DSR6	NM_018962.1	521	cagtgcaagccacagattgaacttc	279541	-	-	molecular_function unknown	-
18656	DSR8	NM_032589.1	177	gtgagaaagggtctctcattcatt	279542	-	-	-	-
18657	DSR9	NM_148675.1	919	gagcccatgtctcgtatgtaact	279545	-	-	-	-
18658	E46L	NM_013236.1	836	cagaatggccgtctgtgattatt	279577	-	-	see also 5355 line	-
18659	EAT2	NM_053282.1	470	cagcgattatgtggatgtcttc	279608	-	-	see also 9494 line	-
18660	EML4	NM_019063.2	2507	caggaaatcgatcggtattgaagg	279685	-	-	molecular_function unknown	-
18661	EPB41L4A	NM_022140.2	704	cagtcggagcttgagattatga	279723	-	-	see also 8303 line	-
18662	ERH	NM_004450.1	287	cagagctgataccacagacatacc	279755	-	-	cell cycle	-
18663	ET	NM_024311.2	1580	cggctctgactaccgaagatctct	279797	-	-	see also 8609 line	-
18664	FAM3A	NM_021806.1	663	atgtcaacgacctgttgaaatt	279844	-	-	-	-

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18665	FANCD2	NM_033084.2	2311	gaggagattgatgtctactaga	279913	-	-	aplastic anemia(再生不良性貧血)、Fanconi anemia(ファンconi貧血)、Fanconi pancytopenia(ファンconi汎血球減少)
18666	FANCE	NM_021922.1	879	gagagaccgaaacataagtcact	279966	-	-	aplastic anemia(再生不良性貧血)、Fanconi anemia(ファンconi貧血)、Fanconi pancytopenia(ファンconi汎血球減少)
18667	FANCF	NM_022725.1	678	tggaacccggcatccacaatca	279978	-	-	aplastic anemia(再生不良性貧血)、Fanconi anemia(ファンconi貧血)、Fanconi pancytopenia(ファンconi汎血球減少)
18668	FETUB	NM_014375.1	616	ccgagtccttgcgaatacaac	280006	-	-	molecular_function unknown
18669	FEZ2	NM_005102.1	202	cagggggagcagagattggaatgc	280015	-	signal transduction	molecular_function unknown
18670	FHL1	NM_001449.3	832	ctgcgtgattgtctacaagaact	280042	-	-	molecular_function unknown
18671	FKBPL	NM_022110.3	272	tgagagaccgccaccagtcataca	280052	-	-	molecular_function unknown
18672	FKSG2	NM_021631.1	442	ctgctgaactaccgtaaggatgg	280069	-	apoptosis	molecular_function unknown
18673	FLJ10525	NM_018126.1	369	ggcgctgtgcaattcatgatga	280073	-	see also 7269 line	-
18674	FLJ10769	NM_018210.1	936	tgggctcctgagattgaacacagg	280124	-	-	-
18675	FLJ11294	NM_018383.2	3234	tgccacccggcttactggaattg	280191	-	see also 7429 line	-
18676	FLJ11749	NM_024591.2	305	ttgagttcccccagagtcgaaatg	280203	-	-	-
18677	FLJ13448	NM_025147.2	455	gagcgataatacaagtagtaac	280226	-	-	-
18678	FLJ14007	NM_024699.1	682	aagccttacccttggatcatact	280249	-	-	-
18679	FLJ20485	NM_019042.2	1950	ctgggaagtcgttgcataatgatg	280279	-	-	-
18680	FLJ21128	NM_025083.2	912	gagtcggagcccatgtctatag	280302	-	-	-
18681	FLJ21827	NM_020153.2	965	cggtctctactctgtgtaaca	280323	-	see also 7771 line	-
18682	FLJ32452	NM_144576.2	697	tgccgattcagccctggtattcc	280340	-	-	-
18683	FSD1	NM_024333.1	436	ctgcctccggctatcattgaaa	280349	-	-	molecular_function unknown
18684	GAGEC1	NM_007003.2	236	ccgatoagaagaacgtaaaagtaga	280365	-	-	-
18685	GAS1	NM_002048.1	734	ctgcctctcgccctcattcagc	280370	-	cell_cycle	-
18686	GAS8	NM_001481.1	251	ccgcgagcggggagggaacgaaact	280371	-	see also 1020 line	-
18687	GKN1	NM_019617.2	466	gtgtgtggtggattccaacataca	280401	-	cell_cycle	molecular_function unknown
18688	GLTSCR2	NM_015710.2	780	ccggagcttctcacaatccatcc	280410	-	-	molecular_function unknown
18689	GPM6B	NM_005278.2	542	cagcgctgccctgtttatgttc	280420	-	see also 3703 line	-
18690	GPR155	NM_152529.3	1057	aagtcggcatttgtgtactaat	280474	-	-	-
18691	GRCC9	NM_032641.1	374	cggggtgaagagggtattcaag	280529	-	-	-
18692	GREB1	NM_014668.2	1183	ccgcgaccatcggtcttaggtat	280543	-	see also 5843 line	-
18693	GTSE1	NM_016426.3	1177	aggccaagcgggtcgtatgttct	280625	-	cell_cycle, signal_transduction	molecular_function unknown
18694	H-plk	NM_015852.1	1304	tagctaaacatttagtatgttt	280639	-	-	-
18695	H41	NM_017548.2	810	gcgtagctagtgtgtgtatag	280645	-	-	-
18696	HBLD1	NM_194279.1	244	atgctcggattccaatacaaat	280648	-	-	-

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18697	HCG9	NM_005844.2	127	tagtccccacagcaatagggaagc	280654	-	-	-
18698	HERPUD1	NM_014685.1	1025	tagaccgagcgccgggttcagaact	280674	-	-	molecular_function unknown
18699	HHLA2	NM_007072.2	577	aggggatccgaagtctgtaataca	280684	-	-	-
18700	HRASL3	NM_007069.1	630	caggctcaacaacaacatcatga	280720	-	-	molecular_function unknown
18701	HSA27219	NM_018405.2	245	gggtgagggcaccccattctgaag	280723	-	-	-
18702	HSNIN1	NM_017493.4	328	atgtgtcagctctctcctttatga	280732	-	-	molecular_function unknown
18703	HSPC117	NM_014306.2	438	tgggtctgggttggttacatcaact	280739	-	see also 5612 line	-
18704	HSPC121	NM_016395.1	189	cagcgacacccggagctatatct	280773	-	kinase_related,	-
18705	HSPC148	NM_016403.1	161	ggagactacctctctcacaaag	280801	-	-	-
18706	HSPC177	NM_016410.2	345	tggacaagccaattataccatc	280818	-	-	-
18707	HSRG1	NM_014940.2	1877	aggaacggctcttcattcggttac	280833	-	-	-
18708	IFI27	NM_005532.1	142	ctggccaaggatgctacagtgtg	280835	-	-	molecular_function unknown
18709	IFIT1	NM_001548.1	130	atgggaggttatccattgatgaog	280840	-	-	molecular_function unknown
18710	IFIT4	NM_001549.2	1016	atgctatggactatttcgaataaa	280865	-	-	molecular_function unknown
18711	IFIT5	NM_012420.1	859	cagccttacgtctctctggtatgc	280898	-	-	molecular_function unknown
18712	IFRD2	NM_006764.2	185	gggaogctcggaggagttaaccacc	280916	-	-	molecular_function unknown
18713	IMPACT	NM_018439.1	156	tagaattagcagacagatagatag	280926	-	see also 7479 line	-
18714	JPH1	NM_020647.1	610	cggcgttttgtgctcaacttc	280946	-	see also 7905 line	-
18715	KERA	NM_007035.2	904	cagctaagatgggataaattotaaa	280971	-	-	molecular_function unknown
18716	KIAA0174	NM_014761.1	630	tggggtagagacagatcttattg	281001	-	-	-
18717	KIAA0186	NM_021087.1	310	togacgctgcaactgtagcataacc	281013	-	-	molecular_function unknown
18718	KIAA0285	NM_014807.2	1626	cgtatagacggcgaattagact	281031	-	-	-
18719	KIAA0905	NM_014933.1	1253	tggagcgcaaaactggtttacgtttg	281079	-	-	-
18720	KIAA1173	NM_020707.2	604	aagatggaccccccttaactctttg	281134	-	-	-
18721	KREMEN1	NM_032045.3	120	cagccaatgctgggattatagg	281150	-	see also 9071 line	-
18722	KTIN1	NM_004986.1	3924	ttgcttcagcggttaaaccaaca	281269	-	see also 3481 line	-
18723	LENG1	NM_024316.1	143	ggggcccgctacagaattcctacg	281274	-	-	-
18724	LENG4	NM_024298.2	1456	gtgggtgctggcgagatatact	281280	-	-	-
18725	LGP1	NM_032484.3	1550	tgtttgtgctcctacaatcagttg	281290	-	-	-
18726	Lin10	NM_025187.3	342	ctgactcagcagcgggatacaact	281299	-	see also 8875 line	-
18727	LLGL1	NM_004140.2	889	ctgtggcggaactgtgaatctgg	281333	-	kinase_related	-
18728	LMCD1	NM_014583.2	1041	cggctgcactgaataattatttcg	281361	-	see also 5763 line	-



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18729	LMNB2	NM_032737.2	1559	aggagatgcctcacaagttcacg	281365	-	-	molecular_function unknown	-
18730	LMO6	NM_006150.3	1639	cagggtcagactcgggaattctgc	281378	-	-	molecular_function unknown	-
18731	LOC13061	NM_138802.1	484	ctgcocggcagcggagaatgatga	281390	-	see also 9640 line	-	-
18732	LOC55974	NM_018845.1	290	ctgcgcttcagacccgttatatc	281395	-	-	-	-
18733	LOC91614	NM_139160.1	1206	cagaccgaacagactagtgaaa	281430	-	-	-	-
18734	LPIN1	NM_145693.1	1243	tgggtctgacggcgcttacttgg	281479	-	-	molecular_function unknown	-
18735	LPP	NM_005578.1	1638	ctgcgagccctgctacattaata	281522	-	see also 3879 line	-	-
18736	LRBA	NM_006726.1	2401	tgggttacgtgttatctacaac	281612	-	see also 4735 line	-	-
18737	LRG	NM_052972.1	636	aggggtcgcgtgcaattagaacg	281797	-	-	molecular_function unknown	-
18738	LRPPRC	NM_133259.2	1748	ttgtacaaggatggacgttattg	281856	-	see also 9557 line	-	-
18739	LY6GB	NM_021221.1	935	ctgtggacagatacttctacc	281920	-	-	-	-
18740	LY9	NM_002348.1	866	ttgtctgtgttttaacacatcc	281929	-	-	molecular_function unknown	-
18741	MAG30	NM_014573.1	643	ggagccctactacaagtatgaag	281945	-	-	-	-
18742	MAD1L1	NM_003550.1	835	cagaccacgagcagcagattaag	281953	-	-	-	prostate cancer(前立腺癌)
18743	MAGEA4	NM_002362.3	834	tgtctctggggcaaatgcaatg	281959	-	-	molecular_function unknown	melanoma(メラノーマ)
18744	MAGEA5	NM_021049.2	423	ctgcacatcgatttcactotatgg	281961	-	-	molecular_function unknown	-
18745	MAGEA9	NM_005385.4	823	tggcctctctgctgcatagcatgc	281963	-	-	molecular_function unknown	-
18746	MAGEL2	NM_019086.2	1623	ctgagcccgagagataggttc	281987	-	-	molecular_function unknown	-
18747	Magas	NM_016089.8	285	cagaagaactatgaacacttatt	281992	-	-	-	-
18748	MCSP	NM_030663.2	378	ctgaagtctcacccttaacatg	281994	-	-	molecular_function unknown	-
18749	MFAP4	NM_002404.1	140	ctggactgtgacacatcatgc	281998	-	-	extracellular matrix structural constituent	Smith-Magenis syndrome chromosome region(Smith-Magenis症候群染色体部位)
18750	MGC23947	NM_152278.1	281	acgcgcgtatggagaatttgaac	282020	-	-	-	-
18751	MGC26979	NM_153704.2	21	tggcggtttggccctcttatcc	282021	-	see also 10013 line	-	-
18752	MGC29816	NM_152272.1	531	gaggagggtgtatcgtctgtatca	282110	-	see also 9825 line	-	-
18753	MLF2	NM_005439.1	239	ctgtatgatccctttgtctatcca	282125	-	-	molecular_function unknown	-
18754	MLN51	NM_007359.3	2107	caggcgcgtatgaacttttgtaat	282170	-	see also 5090 line	-	-
18755	MN1	NM_002430.1	4045	ggggccaagtggcacagtagttcg	282197	-	cell_cycle	molecular_function unknown	meningioma(メニンジオーマ)
18756	MORF4L2	NM_012286.1	639	gaggaggcgtttaagaatagaat	282207	-	-	molecular_function unknown	-

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18757	MPV17	NM_002437.3	510	ttggcctgtccaatgtgttc	282227	-	-	molecular_function unknown	-
18758	MRPL39	NM_017446.2	141	atgcggaatgatctttaataa	282236	-	see also 7013 line	-	-
18759	MRPL40	NM_003776.2	138	gcgagcgtcattgtgtcttct	282278	-	-	-	-
18760	MRPS24	NM_032014.1	475	gtccctcaaaaggttgtataa	282333	-	-	-	-
18761	MSLN	NM_005823.2	1016	tagacgagagcctcatctctac	282337	-	-	-	-
18762	MSMB	NM_002443.2	83	atgcaatgcacatgcatttca	282346	-	-	-	prostate cancer(前立腺癌)
18763	MUM-1	NM_032853.2	256	tggcccggaacgcgcgactcaaca	282358	-	-	-	-
18764	NAG	NM_015909.1	1960	cagctggcagcgtattactatag	282435	-	-	-	-
18765	NAP1	NM_016481.2	524	tggcacacccgtactagacatca	282498	-	-	-	-
18766	NBR2	NM_005821.2	598	ttgttcctcgacacaaggattcc	282512	-	-	molecular_function unknown	-
18767	NCSTN	NM_015331.1	2003	gtgcgttctactgcacgattagc	282555	-	see also 6367 line	-	-
18768	NDRG2	NM_016250.1	265	gtggactcaactataaatcttg	282561	-	see also 6753 line	-	-
18769	NEDF	NM_016079.1	62	tgtcaatgagtggtcattgaag	282574	-	-	-	-
18770	NEUGRIN	NM_016645.1	677	atggagcagatacggattattaca	282581	-	transcription_regulat or	-	-
18771	NOC4	NM_006087.3	740	ggagacgctctgtggatttcgataa	282596	-	-	molecular_function unknown	-
18772	NOLA3	NM_018648.2	122	ggcaggagagatcgagctctatac	282600	-	see also 7535 line	-	-
18773	NPC2	NM_006432.3	372	ggacgtgatgtgttaagagtg	282611	-	-	molecular_function unknown	Niemann-Pick disease(ニーマン・ピック病)
18774	NRM	NM_007243.1	86	tggagttcgtgagctttacctcc	282615	-	-	-	-
18775	NTN2L	NM_006181.1	1559	cgcacatcagcctaaagaagttc	282619	-	-	-	-
18776	NTNG1	NM_014917.1	1438	tggacctcgcctacgcaatattg	282643	-	see also 6088 line	-	-
18777	NTNG2	NM_032536.1	731	cgggaccgcttcgccaatttgg	282651	-	-	-	-
18778	NXPH3	NM_007225.1	493	cagcgtccacttccaacacacatg	282658	-	-	molecular_function unknown	-
18779	NXPH4	NM_007224.1	843	aagagtcacgcgctttcaattgc	282662	-	signal_transduction	-	-
18780	NYREN18	NM_016118.3	1114	aaggatccgaaactatcacagt	282690	-	see also 6672 line	-	-
18781	OFD1	NM_003611.1	316	tggcgcagtcacaacatgtttacc	282703	-	see also 2425 line	-	-
18782	OTOF	NM_004802.2	1778	aagctggacgcgacttctgaagc	282795	-	-	-	deafness(耳聾)
18783	P8	NM_012385.1	299	tggtagaccaagctgcgaattca	282919	-	-	molecular_function unknown	-
18784	PART1	NM_016590.2	147	tgtacgtctgggtctataatctat	282924	-	apoptosis	-	-
18785	PDCD1LG	NM_025239.2	542	ggagcgaagagcagtagcaaatgc	282929	-	see also 6935 line	-	-
18786	PHEMX	NM_005705.3	838	gggtggacccacacattgtctcc	282941	-	-	-	-
18787	PKP2	NM_004572.1	2451	atgcacgcgacgtcttaaacacc	282977	-	-	structural molecule	-
18788	PLAC1	NM_021796.1	600	gggacgcctcatgaattgtga	282991	-	-	-	-
18789	POLA2	NM_002689.2	1821	cagattcagccggaatactcaagc	283033	-	see also 1751 line	-	-
18790	POPD2	NM_022135.2	175	agggttcagcgtcattaggtgg	283038	-	-	-	-
18791	POPD3	NM_022361.3	1195	cagctcccaactctctataaat	283072	-	see also 8345 line	-	-
18792	PP3111	NM_022156.3	765	cagctgctgggagcatatcaag	283083	-	-	-	-
18793	PP35	NM_181581.1	423	ctgtgcccccaatgttcgatatt	283088	-	-	-	-

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18794	PRCC	NM_005973.4	1557	cagcaatgatgactaagtoatt	283135	-	-	molecular_function unknown	renal cell carcinoma(腎臓癌)
18795	PRKAG2	NM_016203.2	646	cggttagaagatgcattatgc	283144	-	see also 6719 line	-	-
18796	PRM3	NM_021247.1	111	ctgtgtgagtcaggataactct	283171	-	-	-	-
18797	PROK2	NM_021935.2	274	ctgccaggcttgccctgtttacg	283176	-	gpcr, apoptosis, kinase_related, signal_transduction	molecular_function unknown	-
18798	PROL1	NM_021225.1	606	cagctctcaacagtaactatct	283196	-	-	-	-
18799	PROSC	NM_007198.2	1172	ggggcatgtccgggattccagc	283211	-	-	molecular_function unknown	-
18800	PRX	NM_020956.1	524	atgcgccggagccttacaagctc	283216	-	-	-	hereditary motor and sensory neuropathy(遺伝性運動性ニューロパシーおよび遺伝性感覚性ニューロパシー)
18801	PSG9	NM_002784.2	492	gagaagaattcgacatttcacc	283231	-	-	-	-
18802	PTD008	NM_016145.1	371	gtgcggcctcatgcttaagctga	283237	-	-	molecular_function unknown	-
18803	PTTG1P	NM_004339.2	464	ctgcacgctggggaggtttgttg	283241	-	-	molecular_function unknown	-
18804	RAI2	NM_021785.2	1284	cagccgccacacgggtcattaaga	283252	-	-	molecular_function unknown	-
18805	RARRES2	NM_002889.2	351	atgcctgscctgcacaaactgg	283263	-	-	molecular_function unknown	-
18806	RCD-8	NM_014329.2	745	gtggcgttggtctctggtaattg	283267	-	see also 5623 line	molecular_function unknown	-
18807	RER1	NM_007033.2	623	ctggcggattctggtgatgtact	283304	-	-	molecular_function unknown	-
18808	RIOK3	NM_003831.2	1322	ttgatggcggcaggttatcatga	283374	-	see also 2611 line	molecular_function unknown	-
18809	RP1	NM_006269.1	444	aggacggcggagtcctactatgt	283393	-	-	molecular_function unknown	-
18810	RP42	NM_020640.2	81	aagttcgtcagtttatgatcttc	283578	-	-	-	-
18811	SACS	NM_014363.3	11512	ttgacgatgcggccacattataaa	283999	-	see also 5631 line	-	-
18812	SCA7	NM_000333.1	2153	gaggtattacgtgttgactcc	284090	-	see also 283 line	-	-
18813	SCHIP1	NM_014575.1	76	aggctcggggcagcgggttaaac	284102	-	see also 5762 line	molecular_function unknown	diabetes(糖尿病)
18814	SEL1L	NM_005085.3	501	gtgtgtacacacctatgaactaca	284122	-	-	-	-
18815	SEPX1	NM_016332.1	364	gggcagctcccgattctgaatatt	284185	-	-	selenium binding	-
18816	Shax3	NM_152284.2	369	ctgcattacagggcactaaagaga	284189	-	-	-	-
18817	SHFM1	NM_006304.1	147	csagtagacttagctgtgtaga	284195	-	see also 4396 line	-	-
18818	SHFM3	NM_022039.2	1164	atgggaagattggcattcataag	284199	-	signal transduction	molecular_function unknown	split-hand and split-foot(裂手・裂足)
18819	SIPA1L1	NM_015556.1	3025	aagagcgtggtcttcaattgttc	284318	-	see also 6465 line	-	-
18820	SKI	NM_003036.1	498	gtgcgacgagctccacatctact	284361	-	-	molecular_function unknown	-
18821	SLC22A1L	NM_007105.1	781	gtgatgctcagcagctcttaaa	284367	-	-	-	-
18822	SLC35F2	NM_017515.3	440	togatcagcagtgataaccttt	284378	-	-	-	-
18823	SNAP25	NM_003081.2	713	gggcaatgagatgatacacaga	284427	-	-	-	-

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18824	SOST	NM_025237.1	120	gggtggcagggttcgaagaatga	284432	-	-	molecular_function	-
18825	SPAG8	NM_012436.2	152	cggtcgcatctttagacataca	284440	-	-	unknown	-
18826	SPATA2	NM_006038.2	1700	ctgctcagcgttaccattatg	284482	-	see also 4207 line	-	-
18827	SPRY3	NM_005840.1	1021	ctgtcaaggcgtctcttacc	284492	-	signal_transduction	-	-
18828	SQSTM1	NM_003900.2	444	tgttaggaacccgctacaagtgc	284495	-	-	-	-
18829	ST7	NM_013437.2	293	caggcgaaatcattactataagt	284515	-	see also 5439 line	-	-
18830	STAF65(gamma)	NM_014860.1	523	tagctcaccatccatcacgattc	284582	-	-	-	-
18831	SUMF2	NM_015411.1	102	tggctcaagctaggaaatggaca	284595	-	-	-	-
18832	SURF2	NM_017503.2	360	cagcgagctctgtgtaaatatga	284603	-	-	molecular_function	-
18833	SURF4	NM_033161.2	796	ctggaccattccagctctacaagc	284616	-	-	molecular_function	-
18834	SYMPK	NM_004819.1	1805	cagccaggtccgcataaagatc	284634	-	-	molecular_function	-
18835	TBL2	NM_012453.1	900	tgttcgagccttcgaactaag	284651	-	-	unknown	-
18836	TCTEIL	NM_006520.1	340	atggaaacctgtacccgaatgg	284686	-	-	molecular_function	-
18837	TEX27	NM_021943.1	303	togataaccagccaactcttag	284692	-	see also 8205 line	-	-
18838	TFG	NM_006070.3	1265	cagtcaccagcaggaatattcc	284731	-	see also 4215 line	-	-
18839	THSD3	NM_182509.2	367	tggcaacacacaccttggtacc	284739	-	-	-	-
18840	THY1	NM_006288.2	212	cagctgacccgtgagacaaaga	284744	-	see also 4378 line	-	-
18841	TIMP3	NM_000362.3	1599	toggatcacctgggttgtaact	284750	-	see also 296 line	-	-
18842	TLE4	NM_007005.3	1884	aagaagatgccccgattgattcc	284766	-	see also 4888 line	-	-
18843	TM4SF1	NM_014220.1	364	gtgcgatgctttctctgtatig	284792	-	-	molecular_function	-
18844	TM6SF1	NM_023003.1	1103	tggcctatctgttatctacaaa	284835	-	see also 8537 line	-	-
18845	TMEFF2	NM_016192.2	1058	atgtcttgggtcgtatgtcaaga	284854	-	see also 6717 line	-	-
18846	TMEM14A	NM_014051.2	224	aggtggtgtccgtctttgatig	284877	-	-	-	-
18847	TMEM8	NM_021259.1	644	gcgggtggtcagagatttccatca	284885	-	-	-	-
18848	TMEPAL	NM_020182.3	940	gtgcgcgcccccaaacagaaac	284896	-	signal_transduction	molecular_function	-
18849	TPARL	NM_018475.2	749	gtgatcgtctcaactaactaca	284914	-	-	unknown	-
18850	TPD52L1	NM_003287.1	313	cagctagaagcagcaaatattcaac	284926	-	-	-	breast cancer(乳癌)
18851	TSGA10	NM_025244.1	1608	cagaatgctcgccgaattggatg	284959	-	-	-	-
18852	TU3A	NM_007177.1	719	gtgaatccggagcctaatcaagc	285008	-	-	molecular_function	-
18853	TXNIP	NM_006472.1	1172	gagttggtagatctgaacatcc	285026	-	-	unknown	-
18854	UACA	NM_018003.1	662	atgttagttggcgaatattggtg	285052	-	-	-	-
18855	USP6NL	NM_014688.1	2624	tagatagtcctcgtagatatataa	285190	-	-	-	-
18856	UXT	NM_004182.2	238	aagctaagcaactcggagtatat	285196	-	-	-	-
18857	VMD2	NM_004183.1	762	atgcctacgactggattgattatc	285206	-	channel	molecular_function	Best disease(ベスト病)

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18858	VMD2L1	NM_017682.1	598	tggagatcctcttactatgact	285228	-	channel	-	-
18859	VMD2L2	NM_153274.1	586	cggaggagcggcggaatactga	285234	-	channel	-	-
18860	VMD2L3	NM_152439.1	610	ctgctcgccaccatacacattg	285246	-	channel	-	-
18861	WDR6	NM_018031.2	2587	cggcatcgagatggttaaggtaga	285283	-	-	-	-
18862	WFDC1	NM_021197.2	260	cggctctgccaagaatactgg	285286	-	-	molecular_function unknown	-
18863	WIT-1	NM_015855.2	1021	cggctcgaagggtgcataattat	285295	-	-	molecular_function unknown	-
18864	WSB1	NM_015626.7	1250	cggtaggtacatctgtatcttt	285328	-	-	-	-
18865	XG	NM_175569.1	450	tggaggttaacttoaatgatgtgg	285345	-	-	molecular_function unknown	-
18866	YIF1	NM_020470.1	195	atgacacaagcgggtggtattcc	285347	-	-	-	-
18867	ZNF200	NM_003454.2	1988	aagatttggtcggctgtcaaat	285371	-	transcription_regulat or	-	-
18868	ZP4	NM_021186.2	747	tggagaccgagcagtatatgaaa	285389	-	receptor_activity	-	-
18869	AGS3	NM_015597.2	365	aggcaggggccctctacaacatc	285403	-	-	-	-
18870	C1orf33	NM_016183.2	260	ttgggtcggaggcccatctgtatga	285417	-	-	-	-
18871	DAP3	NM_004632.2	450	ttgcttatccagctacatagat	285436	-	see also 3147 line	-	-
18872	FLJ12331	NM_024986.1	541	aagctttcatacaagaataatag	285460	-	-	-	-
18873	GADD45A	NM_001924.2	701	aaggatcctgctctaagtaact	285462	-	see also 1227 line	-	-
18874	GADD45B	NM_015675.1	224	gagtgaggccaaagttgatgaatgt	285469	-	apoptosis, kinase related	structural constituent of ribosome	-
18875	GADD45G	NM_006705.2	175	cggaaaagcgcgtgcattggtgc	285473	-	apoptosis, kinase related	structural constituent of ribosome	-
18876	LACTB	NM_032857.2	508	gagacagttatgcgaattgctag	285480	-	see also 9314 line	-	-
18877	MGC9651	NM_152301.3	307	gaggacatcgcgtctctatacg	285508	-	-	-	-
18878	MRPL11	NM_016050.2	413	gtgacctgaagcatgtgtatga	285515	-	-	structural constituent of ribosome	-
18879	MRPL13	NM_014078.4	820	gtggactccactgaagattatc	285535	-	-	-	-
18880	MRPL14	NM_032111.1	296	aaggtagggcgaccagatactact	285536	-	-	-	-
18881	MRPL15	NM_014175.2	307	gggtttaacgaaggacaatagttt	285546	-	-	-	-
18882	MRPL16	NM_017840.2	897	aagtactgagcccatatgacttg	285579	-	-	-	-
18883	MRPL17	NM_022061.2	324	cggccctcgtgatacaaatgca	285580	-	-	-	-
18884	MRPL18	NM_014161.2	354	tggcacagggttgaggtataag	285591	-	-	-	-
18885	MRPL19	NM_014763.2	570	tggatgatagcttgctatactta	285614	-	-	structural constituent of ribosome	-
18886	MRPL2	NM_015960.2	775	gagatccaaacttgatcataaac	285643	-	-	-	-
18887	MRPL22	NM_014180.2	50	ttgagtcggttatgatacataaa	285660	-	-	-	-
18888	MRPL24	NM_024540.2	533	gagatcgagtgagagatttactga	285674	-	-	-	-
18889	MRPL27	NM_016504.2	313	ggggatagtcgcgtacactaagg	285685	-	-	-	-

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18890	MRPL30	NM_016503.2	224	aagggtgtggagtcctctatttgt	285691	-	-	-	structural constituent of ribosome
18891	MRPL32	NM_031903.1	295	tagacgcacattgaagttaacc	285712	-	-	-	-
18892	MRPL35	NM_016622.2	299	ctgcagtcagatctctaacata	285733	-	-	-	-
18893	MRPL36	NM_032479.2	124	ggccctctccacatttctattt	285744	-	-	-	-
18894	MRPL37	NM_016491.2	410	ccgcctctcggaggttaaacg	285753	-	-	-	-
18895	MRPL4	NM_015986.2	1113	tggcaggactcacgttacagacc	285782	-	-	-	-
18896	MRPL41	NM_032477.1	236	ctggaggttcgtcagatcaagg	285783	-	-	-	-
18897	MRPL42	NM_014050.2	383	tcggccagatctctgtcataata	285790	-	-	-	-
18898	MRPL43	NM_032112.2	293	ggatagtagggccgaatacctaac	285798	-	-	-	-
18899	MRPL46	NM_022163.2	640	gtggcactacacattcaagttc	285815	-	-	-	-
18900	MRPL47	NM_020409.2	662	ggaaaacggagccgcattcaaac	285842	-	-	-	-
18901	MRPL48	NM_016055.3	397	ctgtagggtgaattctactaagt	285849	-	-	see also 6645 line	-
18902	MRPL50	NM_019051.1	301	tagtgcgtataagttcaatcttc	285874	-	-	-	-
18903	MRPL9	NM_031420.2	307	ccggcgcacatcgcgtctataagc	285890	-	-	-	structural constituent of ribosome
18904	MRPS14	NM_022100.1	326	ctggaggcttagtctgtatgtct	285928	-	-	-	-
18905	MRPS15	NM_031280.2	109	tggaggagcgtgagtttgattcg	285930	-	-	-	structural constituent of ribosome
18906	MRPS17	NM_015989.2	134	tggatccctctatttataaagtat	285950	-	-	-	structural constituent of ribosome
18907	MRPS18A	NM_018135.2	303	aggcatgctgcccgaaagatca	285957	-	-	-	-
18908	MRPS18B	NM_014046.2	65	ctgaggcggtctctatgtatc	285964	-	-	-	-
18909	MRPS2	NM_016034.2	129	aagcgcagacggcccttatgatcc	285978	-	-	-	-
18910	MRPS21	NM_018997.1	721	tggctcgcaagatcaacttttg	285990	-	-	-	-
18911	MRPS23	NM_016070.2	257	gtgtatgggtctgtgtaaaagagc	286000	-	-	-	-
18912	MRPS25	NM_022497.3	194	gtgaagggtcatgacagtgaaata	286004	-	-	-	structural constituent of ribosome
18913	MRPS26	NM_030811.3	132	acgacccgcctggccaaatccaag	286012	-	-	-	-
18914	MRPS27	NM_015084.1	1148	gtgcatcttagaccttgatcagt	286035	-	-	-	structural constituent of ribosome
18915	MRPS31	NM_005830.2	688	ggacttcgagtaattgttgatga	286043	-	-	-	-
18916	MRPS33	NM_016071.2	322	atgcagacgcctccgatttcttgg	286059	-	-	-	-
18917	MRPS34	NM_023936.1	363	tggggcatctctgacacctcaaaagg	286060	-	-	-	-
18918	MRPS35	NM_021821.2	546	cagagcaacagagtagtagtcttaa	286073	-	-	-	-
18919	MRPS5	NM_031902.3	263	tagcgggacggcagagtcatttat	286096	-	-	-	-

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18920	MRPS6	NM_032476.2	184	cogctacgagcgtgctttaacc	286126	-	-	structural constituent of ribosome	-
18921	MRPS7	NM_015971.2	294	gagcgcctatagctcctaattca	286128	-	see also 6590 line	-	-
18922	NOLA2	NM_017838.2	400	atgctatataccctctaagacg	286139	-	-	-	-
18923	RPL10L	NM_080746.2	329	tggcagagatggcttccatcgc	286142	-	-	-	-
18924	RPL27	NM_000988.2	256	tttgaaagtgtataactacaat	286143	-	-	structural constituent of ribosome	-
18925	RPS27L	NM_015920.2	79	ttggctagagatttactacatcc	286144	-	-	-	-
18926	UBA52	NM_003333.2	151	ctgaccagcagcgtgtgatatt	286152	-	-	structural constituent of ribosome	-
18927	76P	NM_014444.2	378	caggctcggcacagactatattc	286160	-	see also 5676 line	-	-
18928	ACTA2	NM_001613.1	640	gtgctattcttcgttactact	286207	-	-	structural constituent of muscle	-
18929	ACTC	NM_005159.2	995	ttgctccccctggagcgttaatac	286215	-	see also 3628 line	-	-
18930	ACTG2	NM_001615.2	943	ttgacatccgtaaggacttat	286223	-	-	structural constituent of muscle	-
18931	ACTL7A	NM_006687.2	1245	gtggctccaccgcttggagcag	286239	-	see also 4721 line	-	-
18932	ACTL7B	NM_006686.2	851	cggacggcaaacctcaactatt	286245	-	-	-	-
18933	ACTR10	NM_018477.1	334	ggagacgcgcggtgtgtatttc	286255	-	see also 7492 line	-	-
18934	ACTR1A	NM_005736.2	716	ggacctgtacctatccataaac	286307	-	see also 3980 line	-	-
18935	ACTR1B	NM_005735.2	662	ttgaggtgtcggacaatacaaa	286323	-	-	structural constituent of cytoskeleton	-
18936	ACTR3	NM_005721.3	545	gtggccaatccgcctatggtatag	286343	-	-	structural constituent of cytoskeleton	-
18937	ACTR6	NM_022496.2	124	gtgtcgggtatttcctaattgca	286382	-	see also 8419 line	-	-
18938	ACTR8	NM_022899.3	948	ggagggtctcatcgggaatactcg	286443	-	see also 8520 line	-	-
18939	ACTR11	NM_138289.1	821	aggccgtgtgtaataacatacaaa	286487	-	-	-	-
18940	ANK2	NM_001148.2	4287	ttggcggagactatcattatga	286633	-	see also 730 line	-	-
18941	ARPC1B	NM_005720.2	274	cagagagtaaccgtatttgacc	286813	-	-	structural constituent of cytoskeleton	Alzheimer disease(アルツハイマー病)
18942	ARPC2	NM_005731.2	842	gtgctctaaggcctattatca	286842	-	-	-	-
18943	ARPC3	NM_005719.2	289	aggaccttgatatataactct	286844	-	-	structural constituent of cytoskeleton	-
18944	ARPC4	NM_005718.2	358	atgcagcagagagaactctttat	286847	-	see also 3969 line	-	-

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18945	ARPC5	NM_005717.2	532	ttgagagccgctctgacaatagc	286856	-	-	structural constituent of cytoskeleton	-
18946	ARPM1	NM_032487.2	1298	aagcggtagttaagagatagc	286877	-	-	-	-
18947	BFSP1	NM_001195.2	1026	tggatccgggtgggaagatctta	286893	-	-	structural constituent of eye lens	-
18948	BFSP2	NM_003571.2	683	aggccggagcagatgactttaaa	286917	-	-	structural constituent of eye lens	-
18949	CD2AP	NM_012120.1	975	tggagggcggaacttaagttaa	286952	-	see also 5143 line	-	-
18950	CTNNA2	NM_004389.1	736	acgagagccaaccgagattatgt	286990	-	see also 2951 line	-	-
18951	CYLC2	NM_001340.1	165	acgggacaacacgggtttctataa	287045	-	-	structural constituent of cytoskeleton	-
18952	DIOS170	NM_005436.1	1569	gaggttatctaggcttcactatc	287081	-	-	-	-
18953	DSP	NM_004415.1	7362	gggcccacgggtattcgtctattag	287269	-	-	structural constituent of cytoskeleton	-
18954	FLJ12785	NM_024855.2	991	gcgtctggacgcgactgcttatg	287325	-	see also 8793 line	-	-
18955	GFAP	NM_002055.2	383	gcggctgcggctcgcgatcaactca	287337	-	-	TBP-associated factor 125	alexander disease(アレキサンダー病)
18956	INA	NM_032727.2	1270	tagcaccagtggttgtaagcattt	287344	-	-	structural constituent of cytoskeleton	-
18957	KRT1	NM_006121.2	787	gtgataatctcgggttgattcg	287361	-	-	structural constituent of cytoskeleton	epidermolytic hyperkeratosis(表皮剥離性角質増殖症)
18958	KRT13	NM_002274.2	712	gagctcactctgtctaagactga	287377	-	-	-	white sponge nevus(白色海綿状母斑)
18959	KRT20	NM_019010.1	130	gggacagacaccacgctgttatgg	287382	-	-	structural constituent of cytoskeleton	-
18960	KRT2A	NM_000423.1	532	cagcctctcaacggtgaagtga	287413	-	-	structural molecule	epidermal ichthyosis bullosa of Siemens(表皮水疱症)
18961	KRT5	NM_000424.2	1876	cagctccagcgtcaaatgtgtct	287428	-	-	structural constituent of cytoskeleton	breast cancer(乳癌), epidermolysis bullosa simplex(単純型表皮水疱症)
18962	KRT9	NM_000226.1	1078	aaggacatcgagaatcaatga	287442	-	-	structural constituent of cytoskeleton	epidermolytic palmoplantar keratoderma(表皮掌蹠角皮症)
18963	LOC81569	NM_030812.1	813	gtgtactgtccgagaatctgtg	287456	-	-	-	-
18964	LOR	NM_000427.1	284	ccggtgggagcgtcaagtactcc	287464	-	-	structural constituent of cytoskeleton	progressive symmetrical erythrodermatoderma(進行性対称性紅斑性角皮症)、Vohwinkel syndrome(Vohwinkel症候群)



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18965	MSN	NM_002444.1	979	ccgtgcgaagcctgataccattg	287498	-	see also 1580 line	structural constituent of cytoskeleton	-
18966	NEF3	NM_005382.1	1134	tcgtcatttcgcgaataaccagg	287510	-	-	structural constituent of cytoskeleton	-
18967	NEFL	NM_006158.1	1190	aggagaccgccgactcagtttcacc	287533	-	-	structural constituent of cytoskeleton	-
18968	PPL	NM_002705.2	2477	aagctgttaaaggactatgagtta	287539	-	-	structural constituent of cytoskeleton	-
18969	SCAM-1	NM_005775.2	1004	aggacctgcgggcaattgagacc	287562	-	-	structural constituent of cytoskeleton	-
18970	VIM	NM_003380.1	1469	tagagatggacaggttatcaacg	287584	-	-	structural constituent of cytoskeleton	-
18971	COL11A2	NM_080679.1	755	aagtcctcgtccagttatggaca	287591	-	-	structural constituent of cytoskeleton	-
18972	AMELY	NM_001143.1	189	tggtaccagagcatgataagacc	287615	-	-	structural constituent of tooth enamel	-
18973	CHAD	NM_001267.1	437	cggcctcaagcaacttatctact	287622	-	-	extracellular matrix structural constituent	-
18974	COL10A1	NM_000493.2	2066	ccgagtcgaatggcctatactcc	287644	-	see also 386 line	structural constituent	-
18975	COL11A1	NM_001854.2	1798	atgttaccgttcogttatgtgtg	287678	-	see also 1198 line	structural constituent	-
18976	COL12A1	NM_004370.4	6093	ctgattccggacacactctattc	287845	-	see also 2929 line	extracellular matrix structural constituent	-
18977	COL15A1	NM_001855.2	4085	ttgatgtcagagacataatgaca	287955	-	-	structural constituent	-
18978	COL16A1	NM_001856.2	3059	gggattccttaccattgaacagc	287979	-	see also 1199 line	structural constituent	-
18979	COL18A1	NM_030582.2	3122	ctgtttacgacagcaatgtgtt	287998	-	-	structural constituent	-
18980	COL19A1	NM_001858.2	737	atggacggacagattatgtctacg	288017	-	see also 1201 line	structural constituent	-
18981	COL1A1	NM_000088.2	624	gagaaatcaaccggagggaatttc	288048	-	-	Smad3/Sp-1 heterodimer	Ehlers-Danlos syndrome(エーラー・ダンス症候群)、osteogenesis imperfecta(骨形成不全症)、dermatofibrosarcoma protuberans(隆起性皮膚線維肉腫)
18982	COL1A2	NM_000089.2	148	ttgtggatacgcggactttgtg	288053	-	see also 67 line	Smad3/Sp-1 heterodimer	-
18983	COL27A1	NM_032888.2	661	gtgacgcaggtcgtcacacaatta	288086	-	see also 9334 line	Smad3/Sp-1 heterodimer	-

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18984	COL2A1	NM_001844.3	1517	cagaagggtgaacctgattgctg	288115	-	-	achondrogenesis(軟骨無発生症)、arthroophthalmopathy(-)、hypochondrogenesis(軟骨無発生症)、Kniest dysplasia(Kniest形成不全症)、osteoarthritis with mild chondrodysplasia(変形性関節症)、primary osteoarthritis(変形性関節症)、spondyloepimetaphyseal dysplasia(軟骨發育不全症)、spondyloepiphyseal dysplasia(軟骨發育不全症)、Ehlers-Danlos syndrome(エラー・ダンロス症候群)、aneurysm(動脈瘤)
18985	COL3A1	NM_000090.2	315	atgtgaacgatcaagaattagact	288126	-	-	ATP-dependent DNA helicase II, 70 kDa subunit
18986	COL4A1	NM_001845.2	4175	caggctccttacgacatcatcaaa	288165	-	-	Smad3/Sp-1 heterodimer
18987	COL4A2	NM_001846.1	2022	cgcgatgggctcgatggattcc	288191	-	-	Smad3/Sp-1 heterodimer
18988	COL4A4	NM_000092.2	5115	tggactgggtatagctgttata	288232	-	-	extracellular matrix structural constituent
18989	COL4A5	NM_000495.3	667	gggtgaacccaggtagtagtata	288248	-	see also 388 line	
18990	COL4A6	NM_001847.1	4718	caggcgcaatgataaatcttact	288315	-	see also 1195 line	
18991	COL5A2	NM_000393.2	4027	ccgcacgtgtgatgacctaaagc	288343	-	see also 315 line	
18992	COL5A3	NM_015719.2	4838	ctgcctctatcccgacaagaagt	288368	-	-	extracellular matrix structural constituent
18993	COL6A2	NM_001849.2	1241	aagggaagcaagggttatcaagg	288385	-	-	-
18994	COL6A3	NM_004369.1	7757	gtgtgagggaacggattcctaag	288518	-	-	Bethlem myopathy(ミオパシー) Bethlem myopathy(ミオパシー)、Ullrich congenital muscular dystrophy(フルリッヒ先天性筋ジストロフィー)
18995	COL7A1	NM_000094.2	594	cagggggtcaagctatttctgt	288548	-	-	bullous dermolysis(表皮水疱症)、epidermolysis bullosa(表皮水疱症)、epidermolysis bullosa dystrophica(表皮水疱症)、epidermolysis bullosa simplex(単純型表皮水疱症)、toenail dystrophy(足爪欠損)、pruriginosa epidermolysis bullosa(表皮水疱症)
18996	COL8A1	NM_001850.3	345	aagccctgcccacctcaattcc	288569	-	-	-
18997	COL9A1	NM_001851.2	2876	tgttcagcggagcatttaacaaag	288624	-	see also 1197 line	-
18998	COL9A2	NM_001852.3	1187	ggggcctcgaggagaattgttc	288631	-	-	extracellular matrix structural constituent
18999	COL9A3	NM_001853.2	1620	gggggatgatcagcgaacaaattg	288633	-	-	extracellular matrix structural constituent
19000	KAL1	NM_000216.1	1069	gggagtgtgaccgtcactatagt	288650	-	-	serine protease inhibitor
						-	-	epiphyseal dysplasia(多発性少年性骨障害)
						-	-	Kallmann syndrome(カルマン症候群)

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19001	LAMA4	NM_002290.2	628	tgggtatcagagattccatca	288691	-	-	structural molecule	-
19002	LUM	NM_002345.2	1098	cagttccaccggatattatg	288863	-	-	translation	osteosarcoma(骨髄性骨肉腫)
19003	MAGP2	NM_003480.1	546	cagttacgacgattatgacatcg	288873	-	-	extracellular matrix	-
19004	MATN1	NM_002379.2	1505	aggcggctgtgcggaatatgtcc	288885	-	-	structural constituent	-
19005	MATN3	NM_002381.2	1437	cagctcgtatcttcaaaagactga	288917	-	-	extracellular matrix	epiphyseal dysplasia(多発性少年性骨障害)
19006	MEPE	NM_020203.1	763	cagcggattatcacagattctcaag	288953	-	-	structural constituent	-
19007	MFAP1	NM_005926.1	174	cagtcaccagttcgcaatgagaaa	288978	-	-	extracellular matrix	-
19008	MFAP2	NM_002403.2	477	cgcgctgtgtacgtcatttaaca	289012	-	-	structural constituent	-
19009	MFAP3	NM_005927.3	671	gggaactagcgtttcaattgagat	289023	-	-	extracellular matrix	-
19010	OPTC	NM_014359.2	227	aggcattcctttgaagtgtgc	289053	-	-	structural constituent	-
19011	PRELP	NM_002725.2	496	aggcctgcgattgattaaactgg	289070	-	-	extracellular matrix	-
19012	TECTA	NM_005422.1	509	tagtgcgattggctcctctataca	289093	-	-	structural constituent	-
19013	TFPI2	NM_006528.2	180	ctgtctctgccctcctagactacg	289204	-	-	serine protease inhibitor	-
19014	TNR	NM_003285.1	2855	cagctaccgaatacagaatacagc	289268	-	-	-	-
19015	MYBPH	NM_004997.1	1327	aggcgtctgcacccttagagatcc	289294	-	-	-	-
19016	MYOM1	NM_003803.1	761	gggcctcggcagatgaattgtaaa	289310	-	-	-	-
19017	MYOM2	NM_003970.1	1829	gcgaacctcggagataaacgtcc	289420	-	-	structural constituent of muscle	-
19018	TCAP	NM_003673.2	200	gcgctcgcctcggctgattgatgc	289467	-	-	structural constituent of muscle	-
19019	TTID	NM_006790.1	1318	aagagaccacaattgtttatctaca	289492	-	-	-	-
19020	CRYAA	NM_000394.2	261	tcgattccgaccgggacagattcg	289512	-	-	-	-
19021	CRYAB	NM_001885.1	405	atgtagaccctctcaccattact	289516	-	-	-	-
19022	CRYBA1	NM_005208.3	529	tggatatcgtgggtatcagtata	289537	-	-	-	-
19023	CRYBA2	NM_005209.1	539	cagcggagagttctgtacttacg	289546	-	-	-	-
19024	CRYBA4	NM_001886.1	501	gggctaccgagatttcagttatg	289553	-	-	structural constituent of eye lens	-

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19025	CRYBB1	NM_001887.3	279	aggggccgctgagcagaattctcg	289557	-	-	structural constituent of eye lens	-
19026	CRYBB3	NM_004076.3	346	tgttccaacacgcccgtgatagga	289566	-	-	structural constituent of eye lens	-
19027	CRYGA	NM_014617.2	609	gagacgggtcaaccgattgtact	289585	-	-	structural constituent of eye lens	-
19028	CRYGB	NM_005210.2	540	tagacgagtcctgattgtact	289595	-	-	structural constituent of eye lens	-
19029	CRYGD	NM_006891.2	358	cgccttcgccttcaatgaatcc	289600	-	-	structural constituent of eye lens	cataract(白内障)
19030	CRYGS	NM_017541.2	324	gagggccagataagattcagatc	289612	-	-	structural constituent of eye lens	-
19031	LIM2	NM_030657.2	633	gcgcctaccgggtgcataatgc	289616	-	-	structural constituent of eye lens	-
19032	AMBN	NM_016519.2	892	atggcctatgagccatgtttcc	289629	-	-	structural constituent of eye lens	-
19033	ENAM	NM_031889.1	906	ggggctccctcctctatttc	289659	-	see also 9042 line	structural constituent of eye lens	-
19034	TUFT1	NM_020127.1	959	gcggaaagtcgggcaaatgatag	289742	-	-	structural constituent of epidermis	-
19035	KRTHA6	NM_003771.3	1236	atcaagccctgtattagattc	289754	-	-	structural constituent of epidermis	-
19036	KRTHB2	NM_033033.3	755	ctgcctccctgtgtgagaatga	289757	-	-	structural constituent of epidermis	-
19037	KRTHB4	NM_033045.2	1030	ctgaacctgatgggacattgc	289765	-	-	structural constituent of epidermis	-
19038	CDS3	NM_023948.3	521	ttgacgcagagggatatgtgaag	289766	-	-	structural constituent of epidermis	-
19039	ARVCF	NM_001670.1	1673	ctgtggaacctgtcatcctatga	289771	-	-	structural molecule	-
19040	BFAR	NM_016561.1	623	tgttcctcgtcgtctatcactgg	289778	-	see also 6914 line	structural molecule	-
19041	C21orf29	NM_144991.2	201	aagcgggatacaggatagttcagg	289795	-	-	structural molecule	-
19042	CAV1	NM_001753.3	702	cagtcatacagccgtgtctattc	289819	-	see also 1158 line	structural molecule	-
19043	GLDN1	NM_021101.3	640	tggcaatagaatgttcaagaat	289825	-	-	structural molecule	-
19044	GLDN10	NM_006984.3	649	atgtcttctcggacacaaagtatca	289846	-	-	structural molecule	-
19045	GLDN12	NM_012129.2	400	acgacactacttggctactcatca	289867	-	-	structural molecule	-
19046	GLDN14	NM_144492.1	1321	ctgccacagggccatgaatttga	289876	-	-	structural molecule	-
19047	GLDN15	NM_014343.1	258	togatggctgtggaacaccttgg	289879	-	-	structural molecule	-
19048	GLDN17	NM_012131.1	620	cagataagcgaagaanaatcacga	289899	-	-	structural molecule	-
19049	GLDN18	NM_016369.1	749	cagagacagagtcacaatttat	289912	-	-	structural molecule	Alzheimer disease(アルツハイマー病)
19050	GLDN19	NM_148960.1	808	ctgcccgagaacccagtgtttaa	289917	-	-	structural molecule	-
19051	GLDN2	NM_020384.2	890	gagaaatgcctccaactactacg	289920	-	-	structural molecule	-

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19052	CLDN5	NM_003277.2	878	ctgctgattgcccacattgtcg	289923	-	-	structural molecule	Alzheimer disease(アルツハイマー病)
19053	CLDN6	NM_021195.3	669	ctgaatccctaccacaagaattac	289926	-	-	structural molecule	-
19054	CLDN7	NM_001307.3	530	atgcgggtgacaacatcatcaacg	289927	-	-	structural molecule	-
19055	CLDN8	NM_012132.3	197	tggagagtgctggccttcattga	289936	-	-	structural molecule	-
19056	CLTC	NM_004859.1	2875	cagtcgcgtgtgttggaagattt	290042	-	-	structural molecule	inflammatory myofibroblastic tumors(炎症性筋肉線維芽細胞性腫瘍), inflammatory myofibroblastic tumor(炎症性筋線維芽細胞腫)
19057	COL21A1	NM_030820.2	396	ttgacataggccgagaatttatt	290115	-	-	-	-
19058	CTNNA1	NM_001903.1	1339	agggttaagctgttgcaatgt	290190	-	see also 1216 line	-	-
19059	CTNND2	NM_001332.2	2668	gtggcaccatcaaatagtcacaa	290235	-	-	structural molecule	-
19060	DCTN3	NM_007234.3	487	tggagaatacaacaagactaca	290257	-	-	-	-
19061	DJ473B4	NM_019556.1	419	gtgattcgtcatcgagattgtcg	290267	-	-	-	-
19062	DRP2	NM_001939.1	1264	cagatcaacgtccgatggaaca	290290	-	-	structural molecule	-
19063	EVPL	NM_001988.1	1661	aggagtcgaggcggtttctgtcc	290316	-	-	structural molecule	-
19064	FLJ13646	NM_024584.2	185	acggatctgaacaagcatataa	290324	-	-	-	-
19065	FLJ32214	NM_152473.1	965	ggggcgatagaggaggatataaa	290358	-	signal transduction	-	-
19066	HSPG2	NM_005529.2	12335	caggggcatcgaggcaatgctatga	290415	-	-	structural molecule	Schwartz-Jampel-Aberfeld syndrome(Schwartz-Jampel-Aberfeld症候群), Silverman-Handmaker type dyssegmental dysplasia(Silverman-Handmaker 型軟骨異形成症)
19067	HUMCYT2	NM_015848.1	758	aagcagctagattacattctagg	290420	-	-	structural molecule	-
19068	ITGBL1	NM_004791.1	1049	gagctgtatgaccgcatattct	290442	-	see also 3327 line	-	-
19069	IVL	NM_005547.1	65	ctgtctctctccagccaatcc	290456	-	-	-	-
19070	K6HF	NM_004693.1	1611	cagtggttcttagcgtgaatttg	290471	-	-	-	-
19071	KRT12	NM_000223.1	1145	cgaagccgaggccgactactgc	290491	-	-	structural molecule	Meesmann corneal dystrophy(角膜ジストロフィ)
19072	KRT4	NM_002272.1	1324	cagcttaaatgacgagatcaact	290499	-	-	structural molecule	-
19073	KRT7	NM_005556.2	1347	ggagtggagccggtgaattctct	290505	-	-	structural molecule	breast cancer(乳癌)
19074	KRTHA7	NM_003770.3	1672	aggcccgaggttaggagattgagg	290510	-	-	structural molecule	-
19075	KRTHB5	NM_002283.2	935	cagacacctcggctcatagtcagg	290513	-	-	-	-
19076	KRTHB6	NM_002284.2	1309	aggcgtcggctcgggtgaattgtct	290514	-	-	-	monilethrix(連珠毛)
19077	LAD1	NM_005558.3	1552	cagcaagcggccacctcttttgaga	290521	-	-	structural molecule	-
19078	LAMA1	NM_005559.2	4352	ctgaactgtgcgataacacagc	290591	-	see also 3865 line	-	-
19079	LAMA2	NM_000426.2	763	tgcgtattctggcctgagatttc	290700	-	see also 327 line	-	-
19080	LAMA3	NM_000227.2	185	ctggatactatcgggatcataaa	290937	-	signal transduction	structural molecule	epidermolysis bullosa(表皮水疱症)
19081	LAMB2	NM_002292.2	4326	cagaacgtcgtgcccaactctca	291296	-	see also 1470 line	-	-
19082	LAMB3	NM_000228.1	2736	cagacgcacacggctcctaattcc	291333	-	see also 170 line	-	-
19083	LAMC1	NM_002293.2	1357	tcgacctgaactctatctgttc	291361	-	see also 1471 line	-	-
19084	LAMC3	NM_006059.2	3993	ggcagctacgcgcaacagaacc	291449	-	-	structural molecule	-
19085	LGMRI	NM_153450.1	433	cagtagctcttcaatctctatca	291456	-	-	-	-
19086	LMNB1	NM_005573.2	762	cagatcaagcttcgagaatatga	291460	-	see also 3873 line	-	-
19087	LOC12614	NM_145807.1	1263	ggcgtgtcgtccggttaacagc	291500	-	-	-	-
19088	MAP1A	NM_002373.3	7003	cagaacccggcgtgataacc	291570	-	-	structural molecule	-
19089	MAP1B	NM_005909.2	728	aagagatcggggaggtactaagc	291596	-	see also 4125 line	-	-

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19090	MAP4	NM_002375.2	3274	tgggtctaaaggtaacataaagc	291792	-	-	-	-
19091	MAP7	NM_003980.2	885	ctgcacactctagaaattcgtg	291805	-	-	-	-
19092	MBP	NM_002385.1	441	gagcagagcgtccgactataaa	291833	-	-	structural molecule	-
19093	MEGF10	NM_032446.1	2901	agggtcgtcaatgcagattatgc	291878	-	-	-	-
19094	MGC26706	NM_152581.1	579	ttgtacgctttatcatcaactgc	291919	-	-	-	-
19095	MPZ	NM_000530.3	376	tggctccatgtcatcacacaacc	291955	-	-	structural molecule	Charcot-Marie-Tooth disease(シャルコー・マリー・ツース病(神経性進行性筋萎縮症))、 Roussy-Levy syndrome(ルシー・レヴィ症候群)、 Charcot-Marie-Tooth neuropathy(シャルコー・マリー・ツースネフropathy)、hereditary motor and sensory neuropathy(遺伝性運動性ネフropathy)および遺伝性感覚性ネフropathy(ニューロパシー)
19096	MYOC	NM_000261.1	1359	atgctacogtcaactttgcttat	291973	-	-	structural molecule	glaucoma(絶対緑内障)
19097	NF2	NM_000288.2	512	agcccgagatgaggttcaattgc	291979	-	see also 225 line	-	-
19098	NMP200	NM_014502.3	666	gtgcgggtgagccaatggatttg	292022	-	-	-	-
19099	NTN1	NM_004822.1	1116	acgagtgctgtggcctgttaactgc	292044	-	-	-	-
19100	NTN4	NM_021229.2	1369	ctgtgcccggtatatacaatgacc	292067	-	-	-	-
19101	NUMA1	NM_006185.1	5705	gcgccactcatctgtctacagc	292107	-	see also 4275 line	-	-
19102	ODF1	NM_024410.2	169	ctgagatcatcgcgcgaatttag	292112	-	-	structural molecule	-
19103	ODF2	NM_002540.3	2200	cagctagaacgctgtgacaaaga	292156	-	see also 1635 line	-	-
19104	OSF-2	NM_006475.1	769	ctgcacacatcgcgacacatatg	292193	-	see also 4545 line	-	-
19105	PKP3	NM_007183.1	958	ggagactgcatgggttgaacagc	292243	-	see also 4985 line	structural molecule	-
19106	PKP4	NM_003628.2	3125	ggagactccggagcattataaa	292326	-	-	-	-
19107	PLP1	NM_000533.2	524	ttggagcgggtgtgtcattgttt	292355	-	see also 403 line	-	-
19108	PRPH	NM_006262.2	1299	cagccggaagacgggttctgtatca	292404	-	-	structural molecule	-
19109	SPON2	NM_012445.1	895	aggacacgggtgacccgagataacg	292405	-	-	-	-
19110	TEKT1	NM_053285.1	1094	gtgtgtgtgtgtgtgcacacata	292420	-	see also 9495 line	-	-
19111	TEKT2	NM_014466.2	848	ggggccactgctcttaactattgc	292437	-	see also 5697 line	-	-
19112	TEKT3	NM_031898.1	1311	aagacggccgaacattgattgt	292483	-	-	-	-
19113	THOC1	NM_005131.1	49	aagcgggagcgcgggtttacgaag	292488	-	see also 3606 line	-	-
19114	UPK1B	NM_006952.2	573	ctgccttcgggactgagaataat	292537	-	-	structural molecule	-
19115	USH2A	NM_007123.3	854	ctgagcaacaagtgtatgtgt	292560	-	see also 4957 line	-	-
19116	VIL2	NM_003379.3	458	aggaaatccttagcgtgagatct	292759	-	-	structural molecule	-
19117	PII5	NM_015886.1	1030	tgggataggatgccaattcata	292792	-	see also 6561 line	-	-
19118	ECG2	NM_032566.1	273	aagtaatggaagaggtcagtttc	292813	-	-	serine protease inhibitor	-
19119	FKSG28	NM_030929.3	843	cagatogtgtcacatccatatga	292814	-	-	-	-
19120	ITIH2	NM_002216.1	2634	cggactaataggccaagttcatgc	292903	-	see also 1410 line	-	-
19121	ITIH3	NM_002217.1	1258	ggggcaagtcccccttgtataac	292926	-	-	serine protease inhibitor	-
19122	ITIH4	NM_002218.3	205	gtggctcaataggcccaatactgt	292943	-	-	serine protease inhibitor	-
19123	KRTHB3	NM_002282.2	82	tgggttcgcgcctcggaacttca	292979	-	-	-	-

图 46 九转

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19124	OL-64	NM_173850.2		1198	tgggaacacgcgttcttgacc	292985	-	-	-	rheumatoid arthritis(関節リウマチ)、 atherosclerosis(粥状硬化症)、alpha-1- antitrypsin deficiency(アルファーアンチトリプシン 欠乏症)、emphysema(気腫)、hepatocellular carcinoma/cirrhosis(肝細胞癌)
19125	PZP	NM_002864.1		1437	gagactatcacggcacaactatac	293038	-	-	wide-spectrum protease inhibitor	
19126	RECK	NM_021111.1		2423	tcgcgtggcagctcgattactatg	293155	-	see also 8086 line		
19127	SERPINA1	NM_000295.2		1148	aggctgccagcttacattacc	293169	-	-	Hepatocyte nuclear factor 1	
19128	SERPINA1	NM_016186.1		1713	tggacggccatttcattcatg	293191	-	-	serpin	
19129	SERPINA1	NM_175739.2		614	aagtgcctcttcgtcaagaagg	293195	-	-	-	
19130	SERPINA3	NM_001085.2		761	ttgcatcaacctgactatacotta	293208	-	-	serpin	atherosclerosis(粥状硬化症)、Alzheimer disease(アルツハイマー病)、Parkinson disease(パーキンソン病)
19131	SERPINB1	NM_030666.2		487	tggcttcgggcatttgtgtaac	293225	-	-	serpin	
19132	SERPINB1	NM_080475.1		787	ctgaattcggggacgttctatga	293272	-	-	serpin	
19133	SERPINB1	NM_012397.2		1071	cgggtgtacgcccgaaagtccc	293297	-	-	serpin	
19134	SERPINB3	NM_006919.1		509	tgggtggaaagtcaaacgaatga	293317	-	-	serpin	
19135	SERPINB5	NM_002639.1		343	aaggcgctctacgtagacaatca	293337	-	see also 1713 line		
19136	SERPINB7	NM_003784.1		743	gagcgagttgactttaagaatca	293373	-	-	serpin	
19137	SERPINF1	NM_002615.3		449	caggagaacagaatccatcca	293400	-	-	serpin	
19138	SERPINF2	NM_000934.1		1030	ctgcctaagctgtatctgaaca	293422	-	-	serpin	plasmin inhibitor deficiency(プラスミンインヒビ ター欠乏症)
19139	SERPING1	NM_000062.1		109	egggatagagccctcctcaaatcc	293424	-	-	serpin	hereditary angioneurotic edema(遺伝性血管神経 性浮腫)、partial deficiency of complement component 4(補体第4成分欠損症)
19140	SERPINI1	NM_005025.1		1096	aagctctcttagaggttaatga	293455	-	-	serpin	
19141	SERPINI2	NM_006217.2		946	tgaacataaccgagatatattag	293476	-	-	serpin	encephalopathy(脳障害)
19142	SLPI	NM_003064.2		291	caegtgaacttatggccaatgtttg	293489	-	-	serine protease inhibitor	
19143	SPINK1	NM_003122.1		103	ttgagcttatctgtaaacactgg	293494	-	-	translation	
19144	SPINK2	NM_021114.1		275	caggagaaggtgggtcataatatta	293505	-	-	serine protease inhibitor	
19145	SPINK4	NM_014471.1		178	ctgatgggtccacatatatcgaat	293507	-	-	serine protease inhibitor	
19146	SPINK5	NM_006846.1		2235	ctgatggcaaatcgtacaacaat	293543	-	-	serine protease inhibitor	
19147	SPINLW1	NM_020398.2		185	cagacaatgccagacacaaga	293567	-	-	-	
19148	SPINT1	NM_003710.2		1025	cagatctgcaagggtttcgttta	293577	-	see also 2534 line		
19149	SPINT2	NM_021102.1		669	cagcgatatgttcaactatgaag	293593	-	-	serine protease inhibitor	
19150	UNC5D	NM_080872.1		1538	gagtaaccacggcgaagaatcattc	293625	-	see also 9533 line		
19151	WFDC10A	NM_080753.2		239	cagagattgtcaagcaataaca	293647	-	-	-	
19152	WFDQ12	NM_080869.1		84	aggaaattaaaagagacctataga	293648	-	-	-	

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19153	WFDC3	NM_080614.1	742	gtgagtgatgattccgaattaga	293664	-	-	-	-
19154	WFDC8	NM_130896.1	80	atgtgagactgcgaactgaagg	293667	-	-	-	-
19155	AHSG	NM_001622.1	175	gttggtatagactacatcaatca	293687	-	kinase related, signal transduction	cysteine protease inhibitor	-
19156	BIRC4	NM_001167.2	301	gagatacctgctgggtcttagt	293703	-	apoptosis	cysteine protease inhibitor	-
19157	BIRC5	NM_001168.1	290	tcgtccggtgctgcttcttc	293740	-	apoptosis, cell cycle	cysteine protease inhibitor	hepatocellular carcinoma(肝癌), colorectal cancer(大腸癌), non-hodgkin lymphoma(非ホジ キンリンパ腫), breast cancer(乳癌), lung cancer(肺癌), neuroblastoma(神経芽細胞腫), melanoma(メラノーマ), colorectal cancers(結腸
19158	CAST	NM_001750.4	1029	gagctcgacctccgctcaattaa	293760	-	-	cysteine protease inhibitor	Alzheimer disease(アルツハイマー病)
19159	GST11	NM_080830.2	230	aggattcttcgagctcttaagt	293794	-	-	-	-
19160	GST5	NM_001900.2	245	gggtgaactactactcaatgt	293801	-	-	cysteine protease inhibitor	-
19161	GST7	NM_003650.2	506	gggcccctagttcagatagtga	293812	-	-	cysteine protease inhibitor	-
19162	GST8	NM_005492.2	534	gagcggagacagatgtcttcc	293815	-	-	cysteine protease inhibitor	-
19163	GST9L	NM_080610.1	446	cagactggggcacatcttgatt	293823	-	-	cysteine protease inhibitor	-
19164	GSTA	NM_005213.2	203	ctggacaataactactacattaag	293826	-	-	cysteine protease inhibitor	-
19165	GSTB	NM_000100.2	255	cggggacaaactacttcatcaag	293831	-	-	cysteine protease inhibitor	myoclonic epilepsy(ミオクローヌス痲痺)
19166	KNG	NM_000893.2	1258	tagattgcaacgcgtgaagtttat	293871	-	apoptosis	microtubule motor	total kininogen deficiency(カリクレイン欠損症)
19167	TIMP2	NM_003255.2	503	gaggatccagtagtgagatcaagc	293879	-	see also 2198 line	-	-
19168	TIMP4	NM_003256.1	267	atgctccggtatgaatcaaca	293884	-	see also 2200 line	-	-
19169	C4A	NM_007293.1	2792	tggtctgagggtccttcgaattc	329787	-	-	endopeptidase inhibitor	systemic lupus erythematosus(全身性エリデマ トーデス)
19170	CD109	NM_133493.1	894	aaggagacgtaacgcttacattt	293916	-	see also 9588 line	-	-
19171	FLJ25179	NM_144670.1	314	atggaggccaccaatcagttact	294036	-	-	-	-
19172	SPP2	NM_006944.1	53	ttgctcttggaaatgaactactgg	294039	-	-	endopeptidase inhibitor	-
19173	VIP	NM_015692.1	4835	tggagcccgagtgctcttctact	294077	-	-	-	-
19174	DEFB126	NM_030931.2	96	gtgtctaaacagacgttggaattt	294088	-	-	-	-
19175	CDKN1C	NM_000076.1	314	tgggaccttccagctactagtgc	294096	-	kinase related, cell cycle	nutrient reservoir	hepatocellular carcinoma(肝癌), Beckwith- Wiedemann syndrome(ベックウィズ・ウィーデマン 症候群), Ewing's sarcoma(ユースティング肉腫)
19176	CDKN2C	NM_001262.2	1392	gaggtgcttaactcccgattgaaa	294107	-	see also 822 line	-	-
19177	PKIA	NM_006823.2	685	aagatgcacacgaagttctaca	294118	-	kinase related	-	-
19178	DNAJC3	NM_006260.2	487	atgcagctgttgcgttcacaagc	294136	-	kinase related	-	-
19179	MBIP	NM_016586.1	135	ccgagaggtgctctacgaattct	294174	-	see also 6926 line	-	-



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19180	PPP1R1B	NM_032192.2	1011	gtggaagaccagcagcactaagtga	294199	-	kinase_related, phosphatase, signal_transduction	-	
19181	SOCS1	NM_003745.1	375	tggacccctggcgattctactgg	294200	-	kinase_related	protein kinase inhibitor	-
19182	PPP1R1A	NM_006741.2	396	aaggatcacaccacacatgaag	294205	-	see also 4763 line		
19183	C7orf16	NM_006658.2	176	togtgcagccacttagatgac	294208	-	phosphatase, signal_transduction, kinase_related	protein phosphatase inhibitor	-
19184	CABIN1	NM_012295.2	4191	ttgacacagattacgtcaaatgt	294266	-	phosphatase,	protein phosphatase	-
19185	I-4	NM_025210.1	324	ccgcgcaacgtacagagattacg	294291	-	phosphatase	-	-
19186	ANP32E	NM_030920.2	865	tggatccaccggaagatgatgag	294315	-	see also 8963 line		
19187	SNCB	NM_003085.2	355	aggagggaattccctactgatct	294319	-		phospholipase inhibitor	Parkinson disease(パーキンソン病)
19188	GPS1	NM_004127.3	1189	acgtgtcagccgacatgcatagg	294329	-	cell_cycle, kinase_related	GTPase inhibitor	-
19189	OAZ1	NM_004152.2	447	cagacgccaacacgattactgg	294402	-		ornithine decarboxylase inhibitor	-
19190	PSMF1	NM_006814.2	366	atgtctcgggtagatataag	294411	-		-	-
19191	RNH	NM_002939.2	2703	tgttctctgtaacgaattactgg	294418	-		ribonuclease inhibitor	-
19192	ARRB1	NM_004041.2	1105	gagacgccagtagatatacaatct	294431	-	gpcr, signal_transduction	-	-
19193	ATP1F1	NM_016311.3	238	cagctctgaagaggaacagatatt	294435	-		enzyme inhibitor	-
19194	INF1	NM_000267.1	5708	ctgtcaatctcgcatctacttaa	294536	-	see also 211 line		
19195	ALS2	NM_020919.2	4717	atgtctcttcgactaaataagc	294766	-	see also 8023 line		-
19196	ARHGEF3	NM_019555.1	256	ccgagtcacgtcgtctagcaaac	294784	-	signal_transduction	-	-
19197	ARHGEF4	NM_015320.2	2131	ccgcgacgtgtgtactacacagg	294826	-		-	-
19198	ARHGEF6	NM_004840.1	1427	gaggagcgggtaccttattgtatt	294862	-	see also 3355 line		-
19199	FARP1	NM_005766.1	903	tagtgcgtaccaggtacccttgg	294911	-		-	-
19200	FBXO8	NM_012180.1	367	ctgcgagcaacatttctaacacc	294945	-	see also 5182 line	guanyl-nucleotide release factor	-
19201	GBF1	NM_004193.1	2913	aggtctggttcgggagaaactatg	295043	-		-	-
19202	PSCD1	NM_004762.1	757	gagctctccgggaatctctatga	295086	-		-	-
19203	PSCD2	NM_004228.3	1280	gagctgtggacccttctctatgaga	295098	-		guanyl-nucleotide release factor	-
19204	PSCD4	NM_013385.2	1079	gagccacggggaattataacctct	295108	-		guanyl-nucleotide release factor	-
19205	RAB2L	NM_004761.2	1696	acgggtcttcctggccaacattgg	295129	-	signal_transduction	guanyl-nucleotide release factor	-
19206	RASGRF1	NM_002891.3	2667	ctgtctggaactggacaataacc	295167	-	see also 1929 line		-
19207	DELGEF	NM_012139.2	612	gggactgtgttggcatcatgtgg	295191	-		-	-
19208	WBSR16	NM_030798.2	438	ctcgggatgttacgaaagtctgg	295201	-		-	-

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19209	RIN2	NM_018993.2	2658	acgcatcaagaacgacgctcttatg	295249	-	see also 7644 line	-	-
19210	RGL	NM_015149.2	2434	ctgtctggtgagctccattacc	295292	-	signal_transduction	guanyl-nucleotide release factor	-
19211	ABR	NM_001092.3	459	aagcatttctgctataactataa	295303	-	signal_transduction	-	medulloblastoma(髄芽腫)
19212	ARHGEF2	NM_006420.1	2309	atgctctagcgattcaattatt	295363	-	-	-	-
19213	ARHGEF7	NM_003899.2	1589	gagcatgattgagcggattatg	295461	-	see also 2656 line	-	-
19214	BCAR3	NM_003567.1	1926	cagagcgccactctgagtaaga	295508	-	cell_cycle, signal_transduction	-	breast cancer(乳癌)
19215	BIG1	NM_006421.2	3327	tggagtgaaacctcgatacatt	295600	-	-	guanyl-nucleotide release factor	-
19216	ECI2	NM_018098.4	626	gtgagctagctactcactatt	295694	-	see also 7254 line	-	-
19217	FLJ10244	NM_018037.1	420	atggggctcagataacattatg	295773	-	see also 7215 line	-	-
19218	GPIG4	NM_152545.1	293	tagtacctaattggtgattactat	295832	-	-	-	-
19219	HAPIP	NM_003947.1	322	gcggaaactctgacgtatttgg	295878	-	signal_transduction	guanyl-nucleotide release factor	-
19220	KIAA1010	NM_015221.1	741	tggggtgcctgtacagattcc	295945	-	signal_transduction	-	-
19221	Link-GEFII	NM_016339.1	1132	aagaactgtttcgcaatttga	296053	-	-	-	-
19222	LOC22100	NM_145313.1	639	cgggcccacggctgtagacaagg	296062	-	-	-	-
19223	MCF2	NM_005369.2	1068	gaggtgaatgagctacgtacc	296102	-	see also 3742 line	guanyl-nucleotide release factor	-
19224	MCF2L	NM_024979.2	327	aggacgggaagcccggttatacc	296157	-	-	-	-
19225	NET1	NM_005883.2	917	togaagtcgctagtaacaatacc	296217	-	-	-	-
19226	PDZGEF1	NM_014247.1	3762	ggggatcgcgctcacttgatgc	296329	-	-	-	-
19227	PDZGEF2	NM_016340.1	667	ggcgcaaacacattactactatga	296370	-	see also 6823 line	-	-
19228	RALGDS	NM_006266.1	315	gagtgggccctgaacctttatga	296458	-	see also 4357 line	-	-
19229	RALGPS1	NM_014636.1	1837	cagactggttcccgttttcacgc	296493	-	see also 5810 line	-	-
19230	RASGRF2	NM_006909.1	2782	aagcacgcacagagatttcgaact	296592	-	see also 4847 line	-	-
19231	Rgr	NM_153615.1	1559	ctggcaacacgcattacaactg	296620	-	signal_transduction	-	-
19232	SOS2	NM_006939.1	3805	agggtaccggtcgtactatgt	296727	-	-	-	-
19233	GRAF	NM_015071.2	2368	cagcagcacggtctctgataat	296770	-	-	-	-
19234	MIG-6	NM_018948.2	1566	aagcgttaaacattttactatgt	296820	-	-	-	-
19235	OPHN1	NM_002547.1	760	aagacggcaacgcgcttatacgc	296822	-	see also 1641 line	-	-
19236	PARG1	NM_004815.2	3309	ttgctctgtagatagactactctt	296965	-	see also 3345 line	-	-
19237	IQGAP3	NM_178229.3	4399	cggacactacgcccacttgaagc	297030	-	-	-	-
19238	RASA1	NM_002890.1	2238	gtgttcagcacgatactatg	297093	-	see also 1924 line	-	-
19239	RASA2	NM_006506.2	1360	ggagaatctgcgctactatctaga	297178	-	see also 4550 line	-	-
19240	RASAL2	NM_004841.2	587	caggacagttcaacctataaagg	297227	-	signal_transduction	-	-
								Rho GDP-dissociation inhibitor	-
19241	ARHGDIB	NM_001175.1	556	aagtggaataaagcaacattatg	297304	-	signal_transduction	-	-
19242	ARHGDIG	NM_001176.1	467	aggtccacagggagatttcagc	297310	-	signal_transduction	Rho GDP-dissociation inhibitor	-

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19243	GD12	NM_001494.2	681	ttgggtcaagacgttatagatt	297321	-	-	RAB GTPase activator	-
19244	GD11	NM_001493.1	694	cogtcaaccgcatacagtgatc	297360	-	signal_transduction	RAB GTPase activator	mental retardation(精神遅滞)
19245	RIN3	NM_024832.3	2612	ggggagggttctactactcga	297442	-	see also 8771 line	-	-
19246	RANGAP1	NM_002883.2	829	cagaacaccgtctggagatgatg	297449	-	signal_transduction	RAN GTPase activator	-
19247	SIP1	NM_006747.2	797	ctggctactaccgcaaatcttc	297461	-	apoptosis	-	-
19248	BART1	NM_012106.2	419	atgaagtggctgtgacatattc	297468	-	signal_transduction	-	-
19249	CCM1	NM_004912.3	1893	ttgaggccactcgcataattgta	297500	-	see also 3413 line	-	-
19250	DKFZp761					-	see also 9145 line	-	-
19251	J1523	NM_032293.3	2388	gtggcctccaggctggatatata	297602	-	see also 6540 line	-	-
19252	MINK	NM_015716.2	2164	ctgggtccgcagataaacaggg	297630	-	signal_transduction	-	-
19253	RPIP8	NM_006695.3	685	cggaccaccagacaggttctaga	297644	-	-	-	-
19254	WAS	NM_000377.1	728	aagatccgaagcgtgatatgg	297651	-	-	small GTPase regulatory/interact ing protein	rheumatoid arthritis(関節リウマチ)、eczema- syndrome(血小板減少症)、Wiskott-Aldrich syndrome(ウイスコット-アルドリッチ症候群)、 thrombocytopenia(血小板減少症)
19255	BNIP2	NM_004330.1	589	tggagagcgtggcgtatgtca	297687	-	apoptosis	apoptosis inhibitor	-
19256	DOCK1	NM_001380.1	5202	gtgatccttcggaaacgataag	297921	-	signal_transduction	-	-
19257	LGN	NM_013296.3	1080	ctgtggccgcagacgcttaaga	297956	-	see also 5389 line	-	-
19258	RAB3-					-	-	-	-
19259	GAP150	NM_012414.2	1343	ggatccgcagcagcacaattgg	298038	-	-	-	-
19260	RALBP1	NM_006788.2	1323	ctgcagggtgggataaaggatt	298119	-	signal_transduction	-	-
19261	RAP1GA1	NM_002885.1	603	gtggcggacataccattgatgca	298138	-	signal_transduction	GTPase activator	-
19262	RAP1GDS	NM_021159.3	1502	ctgctgtctcccttatcacgaca	298194	-	see also 8111 line	-	-
19263	RASA3	NM_007368.2	1146	gtggcgtcttcctacactatgg	298217	-	see also 5094 line	-	-
19264	SH3BP1	NM_018957.2	563	aggactcctatgccaaactcttc	298247	-	-	GTPase activator	-
19265	SRGAP2	NM_014850.1	2654	tggcccgagtcggttacgatct	298277	-	see also 6050 line	-	-
19266	STARD13	NM_052851.1	2584	ggggctagcgcacatgacatgg	298319	-	-	-	-
19267	STARD8	NM_014725.2	1408	aggccacttcacatagtagaata	298333	-	see also 5915 line	-	-
19268	TBC1D2	NM_018421.1	1903	ggcccccacatagtaagtatgatg	298346	-	-	-	-
19269	TSC2	NM_000548.2	582	ctgttaacctcagcagtagacatcg	298360	-	-	-	leiomyoma(血管筋腫)、tuberosus sclerosis(結節 性硬化症)、renal cell carcinoma(腎細胞癌)、 familial nervous system tumor syndromes(家族 性神経系腫瘍症候群)
19270	BCL2L13	NM_015367.1	669	gagaacaactcctctaaactcga	298407	-	cell_cycle	protein translocase	-
19271	PSME1	NM_006263.2	665	cagcccoactgtgggttatatcg	298422	-	apoptosis	-	-
19272	PSME3	NM_005789.2	335	aagtattagaactgatgatgtt	298428	-	-	-	-
19273	PPP2R4	NM_021131.3	863	gggcagcttcgagctgatagacc	298457	-	phosphatase	-	-
19274	PLAA	NM_004253.2	718	tgttcgagtgatggcattatta	298485	-	see also 2857 line	-	-
19275	GM2A	NM_000405.3	573	ctgcccacaagcgaattcgtgtg	298552	-	see also 322 line	-	-

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19274	GLPS	NM_001832.2	147	gtgccagtgtaagagaattgc	298554	-	-	enzyme activator	-
19275	PPPIR12B	NM_002481.2	2914	aagaacctgaccgatactagt	298556	-	signal transduction	-	-
19276	CABYR	NM_012189.2	583	cagcaacctgaagactactacc	298558	-	see also 5184 line	-	-
19277	SPA17	NM_017425.2	326	tagaagaccgttctatacaat	298651	-	see also 7001 line	-	-
19278	IGBP1	NM_001551.1	315	cagcgggctcagagaacacttat	298667	-	phosphatase, protein phosphatase type	-	-
19279	PPP2R2B	NM_004576.2	1811	tggcggctacaataaacctatat	298713	-	see also 3114 line	-	-
19280	PPP2R2C	NM_020416.2	602	gtgactcgagacactacatgtcg	298732	-	see also 7868 line	-	-
19281	PPP2R5A	NM_006243.2	890	gagtatgtttcaactaatctgtgg	298747	-	phosphatase, protein phosphatase type	-	-
19282	PPP2R5B	NM_006244.2	1305	cgggttcactctgaattcgaagc	298763	-	see also 4326 line	-	-
19283	PPP2R5D	NM_006245.2	630	acgtcgccaccttcctcgaatcc	298805	-	see also 4327 line	-	-
19284	PPPIR7	NM_002712.1	73	aggcgggtcgagctcgaagaac	298858	-	phosphatase	-	-
19285	PPP4R1	NM_005134.1	2071	tggaaagttcgacgaactctagc	298925	-	phosphatase	-	-
19286	CAPON	NM_014697.1	555	cggataccggtatgagtttaag	298952	-	-	-	-
19287	SLN	NM_003063.1	183	cgggagctgtttctcaacttca	298966	-	-	-	-
19288	DCPS	NM_014026.3	842	cagcatccagtggtgtataaca	298973	-	-	heat shock protein	-
19289	DNAJA1	NM_001539.1	1033	ggctgcctaatcatcgaaattta	298998	-	-	Heat shock factor	-
19290	DNAJB1	NM_006145.1	878	acgatacccgctgctattcaaga	299014	-	-	protein 1	-
19291	DNAJB2	NM_006736.4	777	ctgaagtcagtcacaatcaatgg	299026	-	-	heat shock protein	-
19292	DNAJB4	NM_007034.3	607	gggcccctccgctcacaacaaga	299041	-	see also 4923 line	-	-
19293	DNAJB6	NM_005494.2	193	atgcctaccgagagatattaaa	299061	-	-	-	-
19294	HSPB3	NM_006308.1	606	aggatccagttggagactaagtga	299084	-	-	heat shock protein	-
19295	HSPE1	NM_002157.1	188	tgagtcgggttctaaaggaaagg	299087	-	-	heat shock protein	-
19296	TBCC	NM_003192.1	931	tcgagagctctggttagatagg	299100	-	see also 2158 line	-	-
19297	TBCD	NM_005993.2	279	tggagcgggtcccgtaataatg	299108	-	-	structural constituent of cytoskeleton	-
19298	TBCE	NM_003193.2	906	ctgcccggttagacaattaat	299189	-	-	-	Kenny-Caffey syndrome(Kenny-Caffey症候群)、hypoparathyroidism syndrome(上皮下小体機能低下症)
19299	C19orf2	NM_003796.2	1285	gtgtgtagcgacactagt,aaag	299246	-	transcription,regulat or	-	-
19300	CABC1	NM_020247.3	1647	gggcaacgcgggaatatgacaga	299257	-	-	-	-
19301	GJA30	NM_016013.1	1176	atgacttcgcttgataagac	299284	-	see also 6614 line	-	-
19302	GKAP1	NM_001281.1	691	atgggaaacgctactctcgaatgc	299297	-	-	chaperone	-
19303	CLN3	NM_000086.1	275	ttgcaacaactctcttctgtgg	299299	-	-	-	Batten disease(バッテン病)、ceroid-lipofuscinosis(セロイドリポフスチン蓄積症)、juvenile amaurotic family idiocy(クローフス病)、melanoma(メラノーマ)
19304	DNAJA2	NM_005880.2	998	ggagtcgcgagtcgtaatacc	299329	-	see also 4088 line	chaperone	-
19305	DNAJA3	NM_005147.3	772	cggctccggctgggaaccatca	299347	-	apoptosis	-	-
19306	DNAJA4	NM_018602.2	866	aagattatcgaggatcatgttga	299365	-	see also 7531 line	-	-

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19307	DNAJB11	NM_016306.3	744	atgccctaatgtcaactagtga	299395	-	see also 6801 line	-	-
19308	DNAJB12	NM_017626.1	338	agggtcaagcaatgtaaaagatta	299411	-	-	chaperone	-
19309	DNAJB8	NM_153330.1	338	tcgttgccaccccgacaagaacc	299413	-	-	-	-
19310	DNAJB9	NM_012328.1	832	aggaataatggttactacataca	299432	-	-	chaperone	-
19311	DNAJB4	NM_005528.1	1135	ggcgatggcccgctcactacattg	299433	-	-	heat shock protein	-
19312	DNAJB8	NM_014280.1	265	ggggttcggcagttatccatct	299436	-	-	-	-
19313	HKE2	NM_014260.2	295	gggtccggctctagtcaaacagg	299453	-	-	chaperone	-
19314	JDP1	NM_021800.1	494	aagaatctgacaaagactcatacc	299460	-	-	-	-
19315	MGC26226	NM_033105.3	516	gagaagcatatagacaaagtagc	299472	-	-	chaperone	-
19316	PFDN2	NM_012394.2	192	cagccctagtgtatcgatacactga	299475	-	-	chaperone	-
19317	SCAP	NM_012235.1	1361	tggagacgtcacgctgtacaagg	299482	-	transcription_regulat	or	-
19318	SCO1	NM_004589.1	343	tggatgaagcacgtcaagaag	299493	-	-	chaperone	-
19319	SIL1	NM_022484.3	641	aagattcgtcgctctttgatct	299518	-	-	-	-
19320	WBSR18	NM_032317.2	166	ggcgacggcgctgtatgtctgc	299529	-	-	-	-
19321	APBP2	NM_006380.2	1924	tggcagatgggcaatattcagt	299588	-	see also 4473 line	-	-
19322	Dlc2	NM_080677.1	343	agccatggagaagtagacaataa	299591	-	-	-	-
19323	DNAL4	NM_005740.1	337	gtgtcacagcctgtgagaattc	299593	-	-	microtubule motor	-
19324	DNC12	NM_001378.1	1042	ggattactctgtgcttctctataa	299605	-	see also 947 line	-	-
19325	FLJ32752	NM_144666.1	2757	tggcaactgttgcttcttact	299652	-	-	-	-
19326	FLJ40427	NM_178504.3	342	tagataacggagtgatcggtaac	299660	-	-	-	-
19327	KLC2	NM_022822.1	1761	ttaggcgcgagcgcttctcttgg	299772	-	-	-	-
19328	KNS2	NM_005552.3	1158	ggcgagacttgaataaaccttgc	299788	-	-	-	-
19329	KNSL8	NM_138343.1	840	tgggtatcgtgaccagaataag	299809	-	-	-	lower motor neuron disease(下位運動ニューロン疾患)
19330	DCTN1	NM_004082.2	2628	ttgctcatgctcgtctcatttg	299821	-	-	-	-
19331	DCTN2	NM_006400.3	850	ggacagctgtacgttggatca	299854	-	-	motor	-
19332	DNAI1	NM_012144.2	554	cagcatatcccgatgaattagt	299882	-	-	motor	-
19333	DNAI2	NM_023036.1	882	ggcgatggcagcgatctctaca	299885	-	-	-	-
19334	DNALI1	NM_003462.3	156	aggctcggctactgaaagtcagc	299903	-	-	axonemal motor	-
19335	CIAO1	NM_004804.2	450	atgtaccacttgcatttggagag	299942	-	transcription_regulat	or	-
19336	ID1	NM_002185.2	299	acgacatgaacggctgtactca	299950	-	transcription_regulat	or	-
19337	RBBP8	NM_002894.1	1559	aggactgactacggtaaaagattc	299984	-	-	-	melanoma(メラノーマ)
19338	SMARCB1	NM_003073.2	243	gggaactacacctcgatgttc	300020	-	see also 2060 line	-	retinoblastoma(網膜芽腫)
19339	THRSP	NM_003251.1	415	caggaaatgacgggacaagtttg	300032	-	transcription_regulat	or	-
19340	RPC32	NM_006467.1	554	aaggcacaccactcactaataact	300042	-	transcription_regulat	or	-
19341	RPC62	NM_006468.4	412	gggtattgcgaatgcttagatat	300054	-	transcription_regulat	or	-

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19342	AES	NM_001130.5	517	cgcctccgagctgaactctatc	300099	-	signal_transduction	-	
19343	ASXL1	NM_015338.3	3855	tgcctacgcagctggagctcttaca	300164	-	transcription_regulat	-	
19344	BCL3	NM_005178.2	919	acgtgaacgcgaactgtactcc	300187	-	cell_cycle, transcription_regulat	translation regulator	leukemia(白血病), chronic lymphocytic leukaemia(慢性リンパ球性白血病)
19345	BMI1	NM_005180.5	689	aagaccagaccactactgaatat	300193	-	transcription_regulat	-	
19346	CCNC	NM_005190.2	279	ctgctacgggtattttcaagaga	300220	-	or	-	non-hodgkin lymphoma(非ホジキンリンパ腫)
19347	CCNH	NM_001239.2	468	ttgtgggtacggcttgatgtat	300242	-	see also 3648 line		
19348	CCNT1	NM_001240.2	2095	ttgccaaaggtactaaactctct	300309	-	cell_cycle, transcription_regulat	cyclin-dependent protein kinase, regulator	-
19349	CCNT2	NM_001241.2	961	ctgcgcaggtaccttaaatcca	300351	-	or, kinase related	-	
19350	DAT1	NM_018640.2	827	cggactacgaggaagggttaatg	300386	-	see also 811 line		
19351	DAXX	NM_001350.2	1090	gcgaactcaacctgatctcatct	300393	-	cell_cycle, transcription_regulat	-	-
19352	FLJ10201	NM_018023.3	1664	ctgcggctctgttttaataat	300451	-	transcription_regulat	-	-
19353	GTF2H2	NM_001515.2	432	tagactgacgtgtactttaaagt	300501	-	apoptosis, transcription_regulat	translation factor, nucleic acid binding	-
19354	JAZF1	NM_175061.2	693	ctcgggaccacacacaaatcaatt	300511	-	or	-	-
19355	JJAZ1	NM_015355.1	1736	tagtcgcaacggaccaggttaaga	300541	-	transcription_regulat	-	-
19356	MADH9	NM_005905.2	846	tgtgtcctcggtcgctactatga	300560	-	see also 6386 line	-	-
19357	MJD	NM_004993.2	358	gaggctcaggatcgatcctataa	300588	-	or	-	-
19358	MLLT3	NM_004529.1	1246	acgttacgcgcaatttgatgat	300641	-	see also 3484 line	-	-
19359	NCOA5	NM_020967.1	704	atgcggaagggccggtgattgt	300683	-	see also 3082 line	-	-
19360	PCQAP	NM_015889.2	701	cagcatcctaataaattgcatca	300708	-	transcription_regulat	translation regulator	-
19361	RBL1	NM_002895.2	2478	gtgtacgcttacgtgatctatgt	300785	-	or	-	-
19362	SEI1	NM_013376.1	643	gggcctgtttgaggaattgaca	300809	-	see also 1930 line	-	-
19363	SIN3A	NM_015477.1	2492	aggtctaaggacttactcaatga	300868	-	transcription_regulat	or, cell_cycle, kinase related	-
19364	SNAPC1	NM_003082.2	852	aaggcatcgtcaagtcacaaactcg	300912	-	see also 6425 line	-	-
						-	see also 2075 line	-	-

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19365	TLE1	NM_005077.3	1170	aagcagatgacaactagttgtgg	300918	-	signal_transduction	-	
19366	TLE2	NM_003260.3	316	atgtcgtacggctcaacatiga	300934	-	transcription_regulat	-	
19367	TRIP-Br2	NM_014755.1	827	aggagctctgtccacatctacc	300971	-	transcription_regulat	-	
19368	TRIP8	NM_004241.1	6018	tggacggactatgcctaacattc	301140	-	see also 5946 line	-	
19369	HSF2BP	NM_007031.1	592	ccgtgcaggccagacaataaga	301183	-	transcription_regulat	-	
19370	FLJ25348	NM_144569.2	946	tggtaggacccgcagatgttcacg	301210	-	transcription_regulat	-	
19371	PWP1	NM_007062.1	1500	aagacgagagaggctgttcttg	301250	-	transcription_regulat	-	
19372	NASP	NM_002482.2	2030	aggaactgtctaccgccgaattaga	301281	-	see also 1588 line	-	
19373	XRCC4	NM_003401.2	800	ccgagatccagctctatgatgaga	301299	-	-	-	
19374	ALKBH	NM_006020.1	509	gtgacccgtagctaccattataa	301309	-	-	-	
19375	FANCA	NM_000135.1	281	gagcctctatgctaatcatcttag	301321	-	-	-	
19376	FANCC	NM_000136.1	669	tgggtatgcacctatagattact	301401	-	see also 120 line	-	
19377	FLJ10858	NM_018248.1	951	aagctaccgactagaataactat	301448	-	see also 121 line	-	
19378	HUS1	NM_004507.2	933	aagaactgtccctcagttatttc	301508	-	signal_transduction	-	
19379	NEIL2	NM_145043.1	1007	cagcgtttgggtgaacgatttct	301518	-	cell_cycle	-	
19380	POLK	NM_016218.1	1697	atgggtgttcggatattctagttt	301577	-	-	-	
19381	RAD9A	NM_004584.2	992	atgacgacattgactctctacatg	301624	-	cell_cycle、 signal_transduction	-	
19382	RBBP4	NM_005610.1	1097	ctgacgcgagactgaatgtctgg	301635	-	transcription_regulat	-	
19383	GDC45L	NM_003504.3	384	cagtcactgtcgtcaatgtatag	301647	-	or	-	
19384	GMNN	NM_015895.2	562	aggagctattgattcttatgatt	301676	-	see also 2361 line	-	
19385	SPHAR	NM_006542.1	387	atgtctattatagatagatttg	301689	-	cell_cycle	-	
19386	REC8L1	NM_005132.1	656	tgtatccgcgctctattctcaaca	301692	-	cell_cycle	-	
19387	CIDEA	NM_001279.2	394	gagagtcaccttgactgtgaca	301708	-	apoptosis、 signal_transduction	-	
19388	ODC40	NM_015891.2	809	gtgttaatctacagggtcaactatg	301742	-	apoptosis regulator	-	
19389	CRNKL1	NM_016652.3	809	aaggctctgcattatatacagc	301783	-	protein tyrosine kinase	-	
19390	GEMIN4	NM_015721.1	2294	ctggctccaccgcagagtagaac	301868	-	-	-	
19391	ARL6IP4	NM_016638.1	621	gaggaatagttaaccacaagaacg	301876	-	-	-	
19392	LUC7A	NM_016424.2	1215	aagcggagatcgaaagtcataata	301910	-	-	-	
19393	FLJ21172	NM_024805.1	664	gtgccaccagtaggtttgttcca	301924	-	see also 6850 line	-	
19394	RNU3IP2	NM_004704.2	579	tggacgggaagctgcatgtgattc	301938	-	-	-	

synovial sarcoma(滑膜肉腫)

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19395	HCA66	NM_018428.1	1169	gtgttctgtgtctgttataac	301978	-	-	-	-
19396	PRPF39	NM_017922.2	1849	atggctgttttacgaaggaag	302027	-	see also 7177 line	-	-
19397	GLE1L	NM_001499.1	1809	ccgtctctacgtctgtatctcc	302073	-	-	-	-
19398	PHLDA2	NM_003311.2	337	tgccctggcctgcctcatttc	302080	-	apoptosis	-	-
19399	CD37	NM_001774.1	772	tgccctgacacacacacctattc	302083	-	-	-	-
19400	GYPC	NM_002101.3	389	tcgtcatctgcgcctacatgtac	302087	-	-	-	-
19401	TM4SF2	NM_004615.2	587	atgaacgaactgtatgtatcc	302100	-	-	mental retardation(精神遅滞)	-
19402	TM4SF4	NM_004617.2	533	tgaggagctgagatactgtttatc	302112	-	-	-	-
19403	TM4SF5	NM_003963.2	57	gtgtgggctctccctcattacc	302127	-	-	-	-
19404	DAD1	NM_001344.1	146	tggacgctacactcgtctgtatata	302134	-	-	apoptosis inhibitor	-
19405	SERP1	NM_014445.2	435	ciggttatggctctcttcattt	302142	-	-	-	-
19406	UBQLN3	NM_017481.2	1057	gggtattataaggcctctatgact	302160	-	-	-	-
19407	APG12L	NM_004707.2	432	cigtgggagacactcctatgatg	302182	-	apoptosis	protein degradation	-
19408	MGC47816	NM_173642.1	1136	ttgcagagagcgtctataccatc	302195	-	see also 10102 line	tagging	-
19409	UBD	NM_006398.1	119	aagaacatctccggtctaagacc	302207	-	-	-	-
19410	GDC23	NM_004661.2	966	gagttatctggctcataacctct	302250	-	see also 3180 line	-	-
19411	PSMD14	NM_005805.1	1106	atgttggtactctgtgtatttaa	302303	-	see also 4051 line	-	-
19412	PSMD8	NM_002812.3	369	gggtcgaactcaagctagtcttctc	302309	-	see also 1830 line	-	-
19413	UK114	NM_005836.1	171	tagtcgacagagcaccattacatt	302321	-	-	-	-
19414	EEF1E1	NM_004280.2	69	ggagactctgtaagggaataaat	302327	-	see also 2868 line	-	-
19415	MRRF	NM_138777.2	486	ctgaagggaagctgctttaaacc	302338	-	-	-	-
19416	PELO	NM_015946.4	2001	atgcagggcacgcttaggatttc	302357	-	-	-	-
19417	TPR	NM_003292.1	6676	gtgtgcacatctgactgatgg	302505	-	see also 2227 line	-	-
19418	MGC14421	NM_032907.2	564	tcgtctaggggctctatagtatttc	302560	-	-	-	-
19419	TRAM2	NM_012288.1	478	gtgtgtaggaaggatacttaac	302586	-	see also 5256 line	-	-
19420	THEG	NM_016585.3	837	ggcggatctccagttgtcaaacg	302613	-	-	-	-
19421	OD81	NM_004356.2	545	gtgtcagaagaacaatttgttcc	302616	-	-	-	-
19422	LPXN	NM_004811.1	263	cggcgagctcgtgtatactacc	302623	-	see also 3344 line	-	-
19423	OCLN	NM_002538.2	1800	aagaactctccgcttggataaa	302656	-	-	-	-
19424	OXA1L	NM_005015.1	1	atgttaactggtgcttcaagatt	302661	-	signal transduction	-	-
19425	PICALM	NM_007166.1	483	aagtgattgcaaggatatagaaca	302704	-	see also 4986 line	-	-
19426	TRAF1	NM_005658.2	254	gggaagagacctccagctataagc	302751	-	apoptosis	astacin	-
19427	VAMP3	NM_004781.2	258	gtggcaactcgggtactactgttc	302762	-	see also 3293 line	-	-
19428	VAMP4	NM_003762.1	197	aagcgacacctcaatgatgaga	302766	-	see also 2574 line	-	-
19429	VAMP8	NM_003761.2	109	aggtggaggaggagtaagaatt	302774	-	-	-	-
19430	DKFZp434								
19430	O0515	NM_178123.2	1483	atggcttattagggaigtgtgtgc	302812	-	-	-	-
19431	KFBP8	NM_012181.2	445	aggcagcaggagcccatcacatcc	302832	-	-	-	-
19432	KIAA0372	NM_014639.1	1995	ctggcttagcaggagactatact	302886	-	-	-	-
19433	LOC57795	NM_021165.1	323	cagttggcaactcggtttagagg	302981	-	-	-	-
19434	PPIL6	NM_173672.1	793	cagcaacgggtcacaattctata	303024	-	-	-	-
19435	STUB1	NM_005861.1	919	aggtattgacgcattcatctct	303038	-	-	-	Parkinson disease(パーキンソン病)
19436	LECT1	NM_007015.1	555	gagttctaagggtttagaactct	303050	-	-	-	-



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19437	PTDSS2	NM_030783.1	1262	gggtgagatctacgacttcattg	303092	-	see also 8946 line	-	-
19438	ELOVL1	NM_022821.1	868	ctggtatcaacttataccaagg	303109	-	-	-	-
19439	ELOVL3	NM_152310.1	617	gtgctgctgtacacaagcttgg	303121	-	-	-	-
19440	PRKAB1	NM_006253.4	547	ggcggaagagggaagttaattat	303132	-	signal transduction	hydrolyzing O-	-
19441	C1orf17	NM_015101.1	745	gagtttaccctgatgaattgg	303142	-	see also 6241 line	glycosyl	-
19442	CEECAM1	NM_016174.3	957	atgtactcggccctcaagagg	303171	-	-	-	-
19443	FLJ22329	NM_024656.2	596	ggctgctactccaactctgg	303178	-	see also 8679 line	-	-
19444	COQ7	NM_016138.3	195	tcggcagctgtggatogaataa	303193	-	-	-	-
19445	COQ4	NM_016035.1	621	aggagcgtcccggaattcgaca	303208	-	-	-	-
19446	MATP	NM_016180.2	497	atgtaggtgtgttctcttga	303217	-	-	-	-
19447	SILV	NM_006928.2	1333	atgtctacggaaagtattacagg	303251	-	see also 4859 line	-	-
19448	FLJ31978	NM_144669.1	416	cagtgggtcgatcaggttttac	303266	-	-	-	-
19449	MGC35274	NM_153374.1	1121	atgcaacttcctctatcacagt	303282	-	-	-	-
19450	NCOA7	NM_181782.1	396	ggagatcagcgtacagaaactaaa	303288	-	see also 10253 line	-	-
19451	OSBP2	NM_030758.1	527	aggatcgtccagcaggttaagc	303360	-	-	-	-
19452	OSBP10	NM_017784.3	1561	ggagatcagcgtagataattct	303400	-	see also 7152 line	-	-
19453	OSBP11	NM_022776.3	1952	tgagagaaggtatcttagtctgt	303464	-	see also 8466 line	-	-
19454	OSBP12	NM_014835.2	252	aagtcacaggaattgtagactta	303481	-	see also 6043 line	-	-
19455	OSBP13	NM_015550.2	949	aggaaacgtagcagtatatacaa	303512	-	-	-	-
19456	OSBP16	NM_032523.2	904	ctgcgacatcatcaggttgatcg	303583	-	see also 9237 line	-	-
19457	OSBP17	NM_017731.3	2707	gtgggtgaccacaacatccact	303669	-	-	-	-
19458	OSBP18	NM_020841.3	2544	acgggttaactcagccataaatg	303741	-	see also 7988 line	-	-
19459	ASAH2	NM_019893.1	1652	caaggctatgcaacgtotataca	303868	-	see also 7751 line	-	-
19460	SFTPB	NM_000542.2	649	aagcggatccaagccatgattcc	303878	-	translation	regulator	congenital alveolar proteinosis(先天性肺胞蛋白症)、pulmonary alveolar proteinosis(肺胞蛋白症)
19461	BTN3A1	NM_007048.3	1319	ggagacattcagccctataatgaat	303879	-	-	-	-
19462	CLU	NM_001831.1	161	aagtaagtagctcaataaaggaaa	303887	-	apoptosis	-	atherosclerosis(粥状硬化症)、Alzheimer disease(アルツハイマー病)
19463	CYB5-M	NM_030579.1	384	aagttgctggagcatattgattt	303908	-	see also 8892 line	-	-
19464	CYBRD1	NM_024843.2	196	tgaggagcgaactagagtttaact	303912	-	-	-	-
19465	FLJ20296	NM_017750.2	332	gggggctgtgtcatccctttgg	303930	-	-	-	-
19466	FLJ23153	NM_024636.1	754	tgtgttataagagagcgtatct	303963	-	-	-	-
19467	FLJ39035	NM_182580.1	267	ctgaacactccctgttcttcttc	303974	-	-	-	-
19468	KIAA0601	NM_015013.1	1891	ccgctccacagtgtaaaccttta	304018	-	transcription_regulat	or	-
19469	MGC20446	NM_153611.2	474	tgggtctggacaggttctacttg	304042	-	-	-	-
19470	MGC25181	NM_152783.2	559	tgccagcgtcccgcttcttgacg	304051	-	-	-	-
19471	PAOX	NM_152911.1	760	ggcctatacaggacacacaaact	304057	-	-	-	-
19472	PCM1	NM_006197.2	5799	aggctctacaacagtgacttaaa	304251	-	see also 4290 line	-	-
19473	SRPUL	NM_014467.1	1467	ctgactctcccaaccgatatatt	304291	-	see also 5698 line	-	-
19474	STEAP2	NM_152999.2	526	ttgacattcgaactatttagatg	304302	-	-	-	-
19475	TSAP6	NM_018234.1	1393	aggagagccgctacaagttctac	304347	-	-	-	-

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19476	FLJ10986	NM_018291.2	1394	ttggggactcgccttcattataga	304367	-	-	-	-
19477	KIAA1838	NM_032448.1	2123	caggggaacgcctagtgttgaag	304414	-	-	-	-
19478	MGC40579	NM_152776.1	804	gtgggatgattacctctctaatt	304446	-	-	-	-
19479	KIAA0992	NM_016081.2	2794	ttgtactggacggcctaattggtac	304516	-	-	-	-
19480	WFS1	NM_006005.2	234	cagggcgcttcccgactcaatgc	304537	-	-	-	deafness(聾)、diabetes mellitus(糖尿病)、diabetes(糖尿病)、Wolfgram syndrome(ウルフラム症候群)
19481	CDT6	NM_021146.2	1018	acagccctccagctatcataac	304560	-	-	-	-
19482	MTL5	NM_004923.2	1129	ttgcaacaacttgcacatgata	304573	-	-	heavy metal	-
19483	PDLIM1	NM_020992.2	846	aagtggctgctcgattggaaat	304591	-	-	-	-
19484	CAMP	NM_004345.3	593	aagaattgtccagagaatcaagg	304602	-	-	antibacterial	-
19485	DEFA1	NM_004084.2	304	caggagaacgtgcctatggaacc	304606	-	-	antifungal peptide	-
19486	DEFA5	NM_021010.1	186	atggactctctgctcttagaacc	304607	-	-	antifungal peptide	-
19487	DEFA6	NM_001926.2	302	ctgcactgtcatgggtattaacc	304614	-	-	antifungal peptide	-
19488	DEFB1	NM_005218.2	155	tggccacagatctgatcattaca	304617	-	-	antimicrobial peptide	-
19489	DEFB103	NM_018661.2	221	gaggatccattatctctgttg	304618	-	-	Gram-positive	-
19490	DEFB104	NM_080389.1	202	atgagagcttactgaatcgata	304634	-	-	antibacterial	-
19491	DEFB106	NM_152251.2	177	cagccatgtggagacattataga	304638	-	-	-	-
19492	DEFB118	NM_054112.1	188	ctgcattccatccaatgaagacc	304642	-	-	-	-
19493	DEFB123	NM_153324.2	213	ggactctgtttactgcaataat	304655	-	-	-	-
19494	DEFB125	NM_153325.1	34	cgggtgacccaaggtagcttga	304657	-	-	-	-
19495	DEFB127	NM_139074.2	47	cagtaacgcgaacaacttaagaag	304672	-	-	-	-
19496	DEFB129	NM_080831.2	71	tggcttgagacgcctgtttaatgg	304678	-	-	-	-
19497	GNLY	NM_006433.2	435	tggcgagcgtctgcagaaattt	304690	-	-	-	-
19498	HTN1	NM_002159.2	113	atgattagcgtgattcacatga	304693	-	-	antifungal peptide	-
19499	HTN3	NM_000200.1	191	tggagctatagatcaaatatc	304701	-	-	antifungal peptide	-
19500	LEAP-2	NM_052971.1	1537	ggagattctgagtgatcacaca	304703	-	-	-	-
19501	C7orf10	NM_024728.1	1089	aggatcagcaagggtattacaca	304743	-	-	-	-
19502	INSIG1	NM_005542.3	932	gggaacataggagacacagattagc	304765	-	-	-	-
19503	PRNP	NM_000311.2	624	ttgtgcacgactgcgtcaatc	304777	-	-	-	Creutzfeldt-Jakob disease(クロイツフェルト・ヤコブ病)、Creutzfeldt-Jakob disease(クロイツフェルト・ヤコブ病)、fatal familial insomnia(致死性家族性不眠症)、Gerstmann-Straussler-Scheinker syndrome(ゲルストマン・シュトイスラー・シャイシカ病)、scrapie(スクレイピー)、schizophrenia(精神分裂症)、Lewy body dementia(レヴィー小体病)、Gerstmann-Straussler disease(ゲルストマン・シュトイスラー・シャイシカ病)、familial fatal insomnia(致死的不眠症)
19504	ATP6V0A4	NM_020632.1	1257	cagatgccacgcgtatcaagagg	304798	-	-	-	-
19505	ATP6V0D2	NM_152565.1	532	ctgatcgaacgccttagctcc	304834	-	-	-	-
19506	BAT3	NM_004639.2	3582	cagcagctcggctgtatataca	304897	-	-	-	-

see also 9882 line

see also 3153 line

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19507	BRD1	NM_012108.1	707	tagaaactactcactactattc	304985	-	-	-	-
19508	STAM2	NM_005843.3	1604	tagctaggacccgatcaaatig	305031	-	-	-	-
19509	STN2	NM_033104.2	1539	gggaacgatctctgcaaaactga	305059	-	see also 9358 line	-	-
19510	SEC22L1	NM_004892.3	503	cagtgctgctggaagaatctag	305096	-	see also 3394 line	-	-
19511	SEC22L3	NM_004206.2	217	gaggagacggctcaagatttag	305104	-	-	-	-
19512	RAB9P40	NM_005833.2	1012	tggaacgattggacattccatgt	305133	-	-	-	-
19513	ELMO2	NM_022086.6	1705	ttgctgagctgagttactctga	305158	-	apoptosis	-	-
19514	ELMO3	NM_024712.2	1440	aagtgaaatcgctcacttag	305178	-	apoptosis	-	-
19515	AMPH	NM_001635.2	304	gagtcgctgcatgaagttctatga	305186	-	-	breast cancer(乳癌)	-
19516	AP4E1	NM_007347.2	3162	ctggttatctctcgcaaatgatg	305305	-	-	-	-
19517	BIN1	NM_004305.2	942	gtggaacagccgcgtaggtttot	305310	-	cell cycle	-	breast cancer(乳癌)、neuroblastoma(神経芽細胞腫)、prostate cancer(前立腺癌)、melanoma(メラノーマ)
19518	BIN2	NM_016187.1	773	cagcaggcgctcttagtcattt	305327	-	-	-	-
19519	BIN3	NM_018688.3	637	ccgagctcagggtgtgtactact	305343	-	-	-	-
19520	EPN1	NM_013333.1	2432	gagcccccacccagctacatctct	305348	-	-	-	-
19521	HOOK2	NM_013312.1	2154	cagcggctggcaaccaattctcg	305361	-	-	-	-
19522	CPLX2	NM_006650.2	535	cagcagatccgagataagtagtg	305367	-	-	-	-
19523	YKT6	NM_006555.3	209	ctgctcaaaagccgcatacagatgt	305369	-	-	-	-
19524	LRMP	NM_006152.1	855	cagacggctactataacttoaat	305389	-	-	-	-
19525	CADPS	NM_003716.2	3892	tgggtgaagttcgttactatc	305489	-	see also 2539 line	-	-
19526	CPLX1	NM_006651.3	391	ggagcaagtcaggcatcaagaag	305503	-	-	-	-
19527	GOLGA4	NM_002078.2	3923	tagcagttcagctagatattgc	305605	-	see also 1344 line	-	-
19528	GLTP	NM_016433.2	654	ccgcctctctctagtaacaata	305707	-	see also 6858 line	-	-
19529	FLJ23790	NM_144963.1	1451	ggagttcaactcgtgtcaatatg	305718	-	-	-	-
19530	LAPTM4A	NM_014713.2	251	tgttacatgtagtaaaactatt	305721	-	-	-	-
19531	NPTX1	NM_002522.1	832	ctgcggacccaactatagtatgc	305748	-	see also 1619 line	-	-
19532	NUP02	NM_012346.3	1051	ccggcacctccacacaacatcc	305763	-	-	-	-
19533	STX17	NM_017919.1	280	ccgattccaataccgagaaatig	305775	-	see also 7174 line	-	-
19534	STX6	NM_005819.3	413	atgcaactgaattgagataaga	305790	-	-	-	-
19535	STX8	NM_004853.1	450	gggtccggaaccagatcaatca	305815	-	-	-	-
19536	TRAPPC3	NM_014408.3	593	aggcggattgaggacaactcttc	305834	-	-	-	-
19537	DLEU1	NM_005887.1	268	atgagacctgtatagatgata	305838	-	cell cycle	-	-
19538	PDAP2	NM_007275.1	384	ggggcagtgatgaagaatctga	305850	-	cell cycle	-	-
19539	SASH1	NM_015278.2	3806	ggcggattctctgataagcatgg	305892	-	see also 6310 line	-	-
19540	TSC1	NM_000368.2	3492	aaggctcagaggttattcgttaa	305953	-	see also 297 line	-	-
19541	BTG4	NM_017589.2	667	aagtcagcaatccgaagatt	305978	-	cell cycle	-	-
19542	C10orf7	NM_006023.1	1233	aogctcaacgaactaatagacttc	306018	-	see also 4202 line	-	-
19543	CUL2	NM_003591.2	2414	aggcgtcggcagatgaatacagc	306099	-	see also 2398 line	-	-
19544	CUL3	NM_003590.1	1837	cgggtgctcagcagcagatttg	306161	-	see also 2383 line	-	-
19545	CUL4A	NM_003589.1	1950	atgctgtatctgcagaataatg	306230	-	cell cycle,	-	Alzheimer disease(アルツハイマー病)
19546	GAR17	NM_139285.1	1815	aggagcaagccactactctagtc	306243	-	cell cycle	-	-
19547	GAS2L1	NM_006478.3	1149	ggatgactccgttagcttagc	306283	-	see also 4546 line	-	-
19548	LOC28343	NM_174942.1	717	ttgatggaattgtcaagatac	306302	-	cell cycle	-	-

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19549	PP1R15A	NM_014330.2	1460	caggatcagccgagatgaaga	306354	-	apoptosis,	-	-
19550	REPRMO	NM_019845.1	383	acgagcgtgacctgtacataatg	306359	-	cell_cycle	-	-
19551	SES1	NM_014454.1	516	ggcgcgttaccctacattatg	306377	-	cell_cycle	-	-
19552	SES2	NM_031459.3	1466	tagctcaccctacataaccatcg	306423	-	see also 9035 line	-	-
19553	SES3	NM_144665.2	1581	tagttactggcggcaggtcaaac	306473	-	cell_cycle	-	-
19554	BCCIP	NM_016567.2	423	gggtaccacagtggttgacaaa	306486	-	cell_cycle, kinase related	-	-
19555	CCNA1	NM_003914.2	1049	aagtagacgaggttctgtctatc	306535	-	cell_cycle, translation regulator	-	-
19556	CCNA2	NM_001237.2	1222	tggcctgaatcattataacgaaa	306588	-	cell_cycle, kinase related	-	-
19557	CCNE2	NM_004702.2	738	ctgtgtattctagccattgattc	306600	-	cell_cycle, kinase related	-	-
19558	CCNG1	NM_004060.3	595	ttgatccgaataagtaaatatag	306628	-	see also 2736 line	-	-
19559	RGC32	NM_014059.1	322	gtgcagattcactttatagaac	306655	-	cell_cycle, kinase related	-	-
19560	BUB3	NM_004725.1	288	ggagactagatcatcaattgaaa	306663	-	-	-	-
19561	MAD2L2	NM_006341.2	718	gtggaagagcgctcctataaagg	306694	-	cell_cycle	-	-
19562	CHFR	NM_018223.1	1878	aagctcaccacgcctgaattc	306715	-	see also 7328 line	-	-
19563	MAD2L1	NM_002358.2	130	tgtgtggcggagttctctcattc	306721	-	cell_cycle	-	-
19564	GML	NM_002066.1	188	ctgtgcggtcataaatgacttca	306726	-	apoptosis, cell_cycle, signal transduction	GP1-anchored membrane-bound receptor	-
19565	CCNG2	NM_004354.1	619	ttgcactataccatactattat	306767	-	see also 2913 line	-	-
19566	CDC16	NM_003903.2	1402	ggagtcggcggtgttcatttca	306829	-	see also 2660 line	-	-
19567	CENPF	NM_016343.2	1126	caggcgtcaaccacagatatactgc	306865	-	-	-	-
19568	ANAPC7	NM_016238.1	1103	tgcacacctgtcgtcttagattgt	307046	-	see also 6744 line	-	-
19569	BCL2	NM_000633.1	72	tagtgatgaagtacatccattat	307067	-	apoptosis, cell_cycle	-	osteochondroma(骨軟骨腫)、leukemia(白血病)、chondrosarcoma(軟骨肉腫)、colorectal cancer(大腸癌)、non-hodgkin lymphoma(非ホジキンリンパ腫)、lung cancer(肺癌)、neuroblastoma(神経芽細胞腫)、ovarian cancer(原発性卵巣癌)、colorectal cancers(結腸直腸癌)、squamous cell carcinomacytic(扁平上皮細胞癌)、lymphoma(リンパ腫)、Hodgkin's
19570	BTG3	NM_006806.3	866	gtgaccggaatcaactggattaat	307082	-	cell_cycle	-	-
19571	CCNB1	NM_031966.2	866	ttgatcgggttcagtcagataaat	307117	-	cell_cycle	USF43/USF44 complex	-
19572	CCNB2	NM_004701.2	543	gtgactagtgtaaggatctatctat	307151	-	see also 3221 line	-	-
19573	CCNB3	NM_033031.1	217	gggggagaaattggccaaacgaaga	307171	-	cell_cycle	-	-

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19574	CCND1	NM_053056.1	672	atgaccccgacgacgatttcattga	307249	-	-	USF43/USF44 complex	衣細胞腫)、chondrosarcoma(軟骨肉腫)、laryngeal cancer(喉頭癌)、non-hodgkin lymphoma(非ホジキンリンパ腫)、liposarcoma(脂肪肉腫)、breast cancer(乳癌)、Li-Fraumeni syndrome(リー-フラウメニ症候群)、leukemia(白血病)、osteosarcoma(骨髄性骨肉腫)、parathyroid adenomatosis(副甲状腺腺腫症)、Ewing's sarcoma(ユーイング骨肉腫)、head and neck cancer(頭頸部癌)、lymphoma(リンパ腫)、multiple myeloma(多発性骨髄腫)、head and neck squamous cell carcinoma(頭頸部扁平上皮細胞癌)、squamous cell cancer(扁平上皮癌)
19575	CCND2	NM_001759.2	1018	ttgaggcggtgctcctcaatagc	307260	-	cell_cycle	cyclin-dependent protein kinase, regulator	nerve sheath tumors(神経鞘腫瘍)
19576	CCND3	NM_001760.2	729	ctgtgctacagattatcccttgg	307267	-	cell_cycle	cyclin-dependent protein kinase, regulator	-
19577	CCNE1	NM_001238.1	454	acgtgcaagcctcggtatttgc	307274	-	see also 810 line	-	-
19578	CCNF	NM_001761.1	2339	aagcggataaacctatgcataca	307330	-	cell_cycle	cyclin-dependent protein kinase, regulator	-
19579	HARC	NM_017913.1	643	ttgtctgaccatccatacttgt	307337	-	cell_cycle	-	-
19580	MPHOSPH 6	NM_005792.1	72	ctgcgcatagaagtttatgcaag	307349	-	cell_cycle	molecular_function unknown	-
19581	MPHOSPH	NM_022782.2	975	ctgactctagatctctacgttaca	307372	-	cell_cycle	-	-
19582	NEDD9	NM_006403.2	173	tggcaaggcccttatgacaaat	307443	-	see also 4486 line	-	-
19583	NOL1	NM_006170.1	1031	ctggactagtggtgtatgattct	307504	-	cell_cycle	-	-
19584	NUDC	NM_006800.2	611	cggggcagaccctgcccattacc	307527	-	see also 4651 line	-	-
19585	SUGT1	NM_006704.2	779	aagaacctatataccatcatc	307550	-	see also 4730 line	-	-
19586	TOB2	NM_016272.2	639	tggcttcgctgtgttcacattg	307561	-	cell_cycle	-	-
19587	HEC	NM_006101.1	345	aaggaccgagaccacttaata	307569	-	see also 4245 line	-	-
19588	PRC1	NM_003981.2	1654	tagtagcattcgccctattcttg	307654	-	-	-	-
19589	HCAP-G	NM_022346.2	2700	cctgtctgcgcagaaattcaggt	307741	-	cell_cycle	-	melanoma(メラノーマ)
19590	CDC27	NM_001256.2	2014	gagtcacatcttagacattataat	307827	-	see also 812 line	-	-
19591	INCENP	NM_020238.1	625	caggcgatccgagacacagatga	307860	-	cell_cycle	-	-
19592	PSEN1	NM_000021.2	532	tgtctggtggtaccattaagtca	307985	-	apoptosis	-	Alzheimer disease(アルツハイマー病)、disinhibition-dementia-Parkinsonism-amyotrophy complex(DDPAC症)
19593	PSEN2	NM_000447.1	411	atgacggcagctccctaatgtcg	308019	-	-	-	Alzheimer disease(アルツハイマー病)
19594	SC65	NM_006455.2	334	ggcgagcagtagagagatcacagc	308075	-	see also 4525 line	-	-
19595	TSGA2	NM_008080.1	473	atggcgtagctactactacatcaat	308091	-	-	-	-
19596	C10orf9	NM_145012.3	403	gtgtcgtcttgcataatattat	308120	-	see also 9764 line	-	-
19597	CCNK	NM_003858.2	284	gaggcgctcgtcggttcattcttga	308130	-	see also 2622 line	-	-

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19598	CCNL2	NM_030937.2	2121	gagcctcagagtgatgaacg	308159	-	-	-	-
19599	CEP2	NM_007186.2	2865	gaggccctagctacgagagaagc	308181	-	kinase_related,	-	-
19600	FLJ13265	NM_024877.1	296	ctggctggtgacacactttatct	308203	-	-	-	-
19601	FLJ40137	NM_173478.1	782	ctgctcagcctgctctctctct	308220	-	-	-	-
19602	FLJ40432	NM_152523.1	1105	ttgtgtagagcgcgctatgagaag	308241	-	-	-	-
19603	LOC91768	NM_138375.1	93	gggctgcatcgaagaatatatg	308244	-	see also 9604 line	-	-
19604	PARD3	NM_019619.2	3512	aagatcgtcgcggacacatagt	308349	-	see also 7724 line	-	-
19605	PARD6A	NM_016948.1	852	ggggcatctgggggtttgacagg	308357	-	see also 6978 line	-	-
19606	SPIN	NM_006717.1	514	aagagttctgcgcttgagtc	308360	-	-	-	-
19607	APEG1	NM_005876.3	2821	ttgcaagcgggtcaatgagatg	308370	-	see also 4087 line	-	-
19608	BTG1	NM_001731.1	497	gggacgcggttacccgtgttattc	308376	-	-	-	-
19609	CD164	NM_006016.3	296	atgttagcgttgtaatactacc	308386	-	see also 4200 line	-	-
19610	CGRF1	NM_006568.1	37	gtgttctgtaaacgctttatga	308398	-	-	-	-
19611	1.Dec	NM_017418.1	582	ggggcctcttgccgtgtttacaca	308425	-	-	-	-
19612	DLEC1	NM_005106.2	4290	tggctacgcccctgggtttcatga	308500	-	-	-	-
19613	DRIM	NM_014503.1	3417	aggctgctcagcacggtatctaa	308611	-	-	-	-
19614	GNMB	NM_002510.1	821	cagaagaacgcatcgaaattcatc	308772	-	see also 1617 line	-	-
19615	LDOC1	NM_012317.2	307	tgtgcagacgcgctgttactatg	308795	-	-	-	-
19616	MDM4	NM_002393.1	267	ggagctatgcactatttaggtca	308804	-	see also 1538 line	-	-
19617	NCK2	NM_003581.1	816	ctgcgcagcccccacagataaagc	308852	-	receptor activity	-	-
19618	PMP22	NM_000304.2	349	aggaaatgtccaccactgtttct	308856	-	-	-	-
19619	RARRES1	NM_002888.1	360	ggcgtacaaccccgaggtctttac	308861	-	-	-	-
19620	TP53I1	NM_006034.2	604	ctgagaaggtcatcattcgtatgg	308879	-	-	-	-
19621	AMSH	NM_006463.2	380	aagtatacacgcctctttattga	308885	-	-	-	-
19622	EDN1	NM_001955.2	365	ctgctcgtccctgatgataaag	308897	-	Proto-oncogene C-JUN	-	-
19623	FGA	NM_000508.2	1230	tgggaacgcggagccctacaacc	308924	-	-	-	-
19624	FGB	NM_005141.1	793	ctgtcaaacctatagagtatac	308958	-	-	-	-
19625	FGFR1OP	NM_007045.2	452	gtgggtgagacccttattattaga	308979	-	-	-	-
19626	FGG	NM_000509.3	428	atgactcaagtattcgatatttg	309005	-	-	-	-
19627	SAS	NM_005981.2	566	ctgtatacaacagattatgattt	309039	-	-	-	-
19628	TBC1D8	NM_007063.2	2653	ttgtgagctgcctcgatattatg	309061	-	see also 4943 line	-	-

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19829	BST2	NM_004335.2	11	tggcatctactcttgatgaact	309073	-	kinase related	-	rheumatoid arthritis(関節リウマチ)
19830	DAB2	NM_001343.1	1123	tgtgtactcgtcgtgaatgg	309095	-	see also 887 line	-	
19831	EMP1	NM_001423.1	246	gtggccacatcgtactgttat	309118	-	-	-	breast cancer(乳癌)
19832	EMP2	NM_001424.2	447	atgattcggcctccattatc	309133	-	-	-	-
19833	LAMP3	NM_014398.2	1089	cagtgaagtggagccctattga	309156	-	-	-	-
19834	LGII	NM_005097.1	1079	atgcaagcctatgctcattgaa	309201	-	see also 3574 line	-	-
19835	PDCD1LG	NM_014143.2	411	gtgcgactacaagcgaattact	309249	-	signal transduction	-	melanoma(メラノーマ)
19836	PRG4	NM_005807.1	284	gtgaactcgagcccaatgttaag	309272	-	see also 4055 line	-	-
19837	RBBP7	NM_002893.2	1165	cggataagaccgtagctttatgg	309371	-	-	-	-
19838	SIL	NM_003035.1	558	aagaccatccgacttgcttatcg	309386	-	see also 2034 line	-	-
19839	SPOCK	NM_004588.2	1426	atgagtcgggtacatatggtag	309518	-	-	-	-
19840	TM4SF8	NM_005724.4	622	cgggctattgattgtacaga	309521	-	see also 3971 line	-	-
19841	TM4SF9	NM_005723.2	743	cagagcatatcgggatgacattg	309534	-	see also 3970 line	-	-
19842	TPD52L2	NM_003288.2	632	aggaccgagtgaggaccataaag	309543	-	-	-	-
19843	TSPAN-1	NM_005727.2	740	ttgtatcacatccgaactatgc	309552	-	-	-	-
19844	TSPAN-2	NM_005725.2	408	gaggttacaatgattacccttaa	309562	-	see also 3972 line	-	-
19845	FLJ32871	NM_144674.1	199	gggtaccgctacctaattcatg	309572	-	-	-	-
19846	EML1	NM_004434.1	758	gggtcagagactgcgtaacaacc	309585	-	-	-	-
19847	SPRY2	NM_005842.2	1193	cagcccaagggtgctctaaattg	309636	-	signal transduction	molecular function unknown	-
19848	TUBGCP2	NM_006659.1	1325	aggattacaacagacaactagg	309658	-	see also 4704 line	-	-
19849	TUBGCP3	NM_006322.3	1563	ctgtggcagcgaagaatacttt	309715	-	see also 4423 line	-	-
19850	PLEK2	NM_016445.1	1073	ggcggagccgagtggttggaagc	309773	-	see also 6860 line	-	-
19851	CAP1	NM_006367.2	307	tggagcggagctctgttggttaca	309778	-	signal transduction , gpcr	-	-
19852	CAP2	NM_006366.1	1380	gtgagcgcccaagtcactgaaat	309819	-	signal transduction , gpcr	-	-
19853	KISS1	NM_002256.2	469	aggaccctgcggactacacactgg	309825	-	-	-	breast cancer(乳癌), melanoma(メラノーマ)
19854	PEX11A	NM_003847.1	334	tgtgtacctcgtctatgcttaaca	309831	-	signal transduction	-	-
19855	PEX11B	NM_003846.1	301	ttgtacttcgcttgacaatgt	309853	-	see also 2614 line	-	-
19856	PEX16	NM_004813.1	650	cagacttcacccctcctgttcc	309860	-	-	-	Zellweger syndrome(ツェルウェーガ-症候群)
19857	PEX3	NM_003630.1	448	ttgcgggtccagtttaacataat	309878	-	see also 2437 line	-	-
19858	PFX	NM_002857.1	81	gtgctcttgatgttgatgataaa	309909	-	see also 1890 line	-	-
19859	PXMP3	NM_000318.1	534	cagagtgaaagcgtgcttatgg	309921	-	-	-	peroxisome biogenesis disorder(ペルオキシソーム生合成障害), Zellweger syndrome(ツェルウェーガ-症候群)
19860	GOLGB1	NM_004487.1	2206	ttggagctcagctaaacttca	309993	-	-	-	rheumatoid arthritis(関節リウマチ)
19861	EBNA1BP	NM_006824.1	530	acgaagcggacccactgatttt	310174	-	-	-	-
19862	RRS1	NM_015169.2	452	gggcatcgtgctcccaagaagaaga	310185	-	-	-	-
19863	TINF2	NM_012461.1	1179	aggaaagaacatcgatatacaca	310201	-	-	-	-
19864	PALM	NM_002579.1	570	cgttgggacgcccgaagacaag	310202	-	-	-	-
19865	SOC52	NM_003877.3	806	tagagatagctcgcattcagact	310210	-	see also 2637 line	-	-
19866	SOC53	NM_003955.2	589	cagaagagcctattacatctact	310220	-	-	protein kinase inhibitor	-

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19667	SOC4	NM_004232.2	1707	ttgtatactgaatataccaga	310263	-	see also 2824 line	
19668	SOC7	NM_080867.2	1648	tggcatcagccctcccaattc	310305	-	see also 9532 line	
19669	NDRG4	NM_020465.1	473	cagcatttcgggttcaagtgt	310312	-	-	-
19670	PLEKH1	NM_006832.1	1609	gagcagatcacgactgataaac	310355	-	-	-
19671	APG5L	NM_004849.1	364	tggcgaattccaattgttc	310368	-	see also 3359 line	
19672	BCAS3	NM_017679.2	1387	atgcaccacagtagtgatgc	310423	-	see also 7109 line	
19673	BCAS4	NM_017843.2	213	ctgatacaggagtatactcaaca	310456	-	-	-
19674	BCL9	NM_004326.1	1814	cggagcgcctctacaaactct	310476	-	signal_transduction	-
19675	CDR1	NM_004065.1	638	tggatcttcagggaagacatat	310531	-	-	-
19676	CLN5	NM_006493.1	1676	tggctcaactatcccaagtgtgg	310539	-	-	ceroid-lipofuscinosis(セロイドリポフスチン蓄積)
19677	DACH	NM_004392.2	1756	gagacgaacggcggtgaacaagc	310571	-	see also 2953 line	
19678	DACH2	NM_053281.2	132	tagtttcggtgtaataaccaca	310585	-	see also 9490 line	
19679	FRAT1	NM_005479.2	862	ctgcagttacgtgcaagcttcc	310615	-	signal_transduction	-
19680	FSTL3	NM_005860.1	190	ctgtcctccggcaacattgaca	310618	-	-	non-hodgkin lymphoma(非ホジキンリンパ腫)
19681	GPC3	NM_004484.2	1556	gagccagtggtcagtcgaattat	310655	-	see also 3040 line	
19682	HHC1	NM_006543.1	623	gtgagcacccgtgacataatgagc	310676	-	-	-
19683	LMO2	NM_005574.2	1268	aagctctccggagagactatct	310693	-	see also 3876 line	
19684	OS-9	NM_006812.1	617	gggtccaagtgcgaccttaagg	310708	-	-	-
19685	SEMA3C	NM_006379.2	1375	tggactcgtgagccttgtaoaca	310752	-	see also 4472 line	
19686	SS18	NM_005637.1	85	atgttgatgacaataaccatct	310792	-	-	synovial sarcoma(滑膜肉腫)
19687	TACC3	NM_006342.1	301	cagacacacaggtcttaagtc	310824	-	-	-
19688	TCL1A	NM_021966.1	312	cagttctgcgcttagtgatcc	310848	-	-	leukemia(白血病)、lymphoma(リンパ腫)
19689	CRADD	NM_003805.2	105	gagccagagacaaacaagtact	310852	-	signal_transduction apoptosis	death receptor adaptor protein
19690	DIABLO	NM_019887.2	187	ctgtgtcgggtctctattgcaca	310866	-	apoptosis	-
19691	FADD	NM_003824.2	590	gtgcagcatttaacgtcatatgt	310885	-	apoptosis, signal_transduction kinase related	death receptor- associated factor
19692	CIDEB	NM_014430.1	1209	gtgacttactcaggctcagtatct	310892	-	apoptosis, signal_transduction	apoptosis regulator
19693	BAK1	NM_001188.2	676	ccgtctcgtgtgacttcactgc	310900	-	apoptosis	tongue squamous cell carcinomas(舌扁平上皮細胞癌)
19694	BCL2L1	NM_006538.1	361	atgtgtatcttcagactgttacg	310910	-	apoptosis	apoptosis regulator
19695	BIK	NM_001197.3	383	tggacgggttcaccacacttaag	310915	-	apoptosis	apoptosis regulator
19696	BNIP3L	NM_004331.1	490	aagtccggactgggtatcagact	310920	-	apoptosis	-
19697	CIA1	NM_004895.3	901	tggatctagccacgcctaatgac	310926	-	apoptosis, signal_transduction	-
19698	E124	NM_004879.2	734	tggtagtctctcgtcatatgccc	310988	-	see also 3388 line	-
19699	TRADD	NM_003789.2	540	aggatgcgctcgaaatctgaag	311002	-	apoptosis, signal_transduction	-
19700	API5	NM_006595.1	145	gaggactttaccgcaatattgg	311013	-	kinase related	-
19701	BCL2A1	NM_004049.2	232	ctgcagtcgctcctcacagatacc	311050	-	apoptosis	apoptosis inhibitor



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19702	BCL2L2	NM_004050.2	217	tgccagacttttaggtataag	311065	-	apoptosis	molecular_function unknown	-
19703	BECN1	NM_003766.2	111	gagataccgactgttcctacg	311087	-	see also 2577 line		
19704	BIRC2	NM_001166.2	1675	gaggactaacccctacagttatg	311113	-	see also 743 line		
19705	BIRC3	NM_001165.3	2870	ctgtaccgaatgtctacgtattc	311140	-	apoptosis、 signal_transduction	-	-
19706	BIRC8	NM_033341.2	1916	cagcgcggtattgattcaagc	311200	-	apoptosis	apoptosis inhibitor	-
19707	BNIP1	NM_001205.1	27	acgtccacgtccggatctgtaac	311201	-	apoptosis	-	-
19708	FAIM2	NM_012306.2	431	cagaaagttcgtcagttctgt	311227	-	-	-	-
19709	GG2-1	NM_014350.1	621	aagtcacatggacccgggttaataa	311238	-	apoptosis	-	-
19710	TAX1BP1	NM_006024.4	259	ggatctactcgtgtgattataca	311266	-	-	-	-
19711	TOSO	NM_005449.3	366	cgagttactctgaagaataacc	311321	-	apoptosis	-	-
19712	MCL1	NM_021960.3	567	tgtctggggaatctggtataaac	311336	-	apoptosis	apoptosis regulator	-
19713	AXUD1	NM_033027.2	628	aagctccgcgcagcgttgaaga	311357	-	see also 9349 line		
19714	BCL2L12	NM_052842.2	748	ctggagagtcacatgcataatg	311370	-	apoptosis	-	-
19715	BCLG	NM_030766.1	540	gggtcaaaaggacgttgaataacc	311384	-	apoptosis	-	-
19716	CARD6	NM_032587.2	466	ttgcggcttaaggcatgaagttt	311413	-	apoptosis	apoptosis regulator	-
19717	CARD8	NM_014959.1	615	cagtcacgattcgttggttcc	311480	-	apoptosis	apoptosis regulator	-
19718	CARD9	NM_022352.2	444	ccgcgtctctcatgcatcag	311495	-	-	-	-
19719	COP	NM_052889.1	272	caggtccgataacctggaaataag	311498	-	apoptosis	-	-
19720	CTNNA1	NM_003798.1	516	tgccagacggatgactcaataa	311511	-	see also 2597 line		
19721	MAEA	NM_005882.2	1180	aagatccgtgagcaacacataaat	311586	-	apoptosis	-	-
19722	MGC13096	NM_032346.1	657	cagccttcaggaggactatcagc	311595	-	apoptosis	-	-
19723	NCKAP1	NM_013436.2	2510	atgacggtactccagtcgaataga	311676	-	see also 5432 line		
19724	PDCD6IP	NM_013374.2	1260	aagccgatttggttaacagatca	311739	-	signal_transduction 、apoptosis	-	-
19725	PPP1R13B	NM_015316.1	1295	aagatccaaatccgtaatgatg	311784	-	-	-	-
19726	TAIP-2	NM_024969.2	1667	atgaccccgagcaatcgttga	311832	-	see also 8829 line		
19727	TEGT	NM_003217.1	623	aaggccgaacatggagatcaaga	311850	-	apoptosis	-	-
19728	TRIAD3	NM_019011.3	1248	aagtaaccgtactctattgaaga	311860	-	-	-	-
19729	C6	NM_000065.1	1212	ttgtacagccgaatattcagatga	311905	-	-	complement	-
19730	C7	NM_000587.1	918	tgggtcgttaaggaggagaataca	311970	-	-	complement	-
19731	C8A	NM_000582.1	634	gtgtacgagtcgcagttattat	312002	-	see also 409 line	complement component 7 deficiency(補体7欠損)	-
19732	C8B	NM_000066.1	314	atggggaacctgcacattctct	312046	-	-	complement activity	O8 beta deficiency(補体第8成分欠損症)、 arthritis(関節炎)
19733	C9	NM_001737.2	429	aagatgcgacttcggttaatgg	312091	-	-	hemolysis	complement component 9 deficiency(補体9欠損)
19734	PAQR10	NM_198403.1	422	tcgacccggatggtcatctattc	312139	-	see also 10321 line		
19735	CLUL1	NM_014410.4	451	aaggctatgcgggagctcttgg	312147	-	-	-	-
19736	OPTN	NM_021980.3	1784	cagcgaatattccgattcaatc	312193	-	see also 8239 line	-	-
19737	SMPX	NM_014332.1	374	caggaaactgcagtaactctatcg	312205	-	-	-	-
19738	TNNT2	NM_000364.1	758	gtggcagcagcatctataacttgg	312210	-	-	-	cardiomyopathy(アルコール性心筋症)
19739	DYSF	NM_003494.2	5100	gtgtgtgctcgtctacattg	312256	-	see also 2358 line	-	-
19740	EMD	NM_000117.1	60	tggacaactacgacgactcttcg	312280	-	-	-	muscular dystrophy(筋ジストロフィ)
19741	FERT1L3	NM_013451.2	686	cagatccgcgtccagtgattga	312307	-	-	-	-

19742	SGCA	NM_000023.1	733	gctgtgactggtgcaatgagcc	312451	-	-	Duchenne-like muscular dystrophy(デュシェンヌ型筋ジストロフィー)、limb girdle muscular dystrophy(肢帯型筋ジストロフィー)
19743	SLMAP	NM_007159.1	481	gaggtacacacatgatactgaga	312464	-	see also 4962 line	-
19744	SSPN	NM_005086.3	413	aggtgacgaacacgactgatt	312491	-	-	-
19745	FEZ1	NM_005103.3	328	tggagacactgtaaatgaatt	312522	-	see also 3578 line	-
19746	SEMA3B	NM_004636.1	561	ttgttactgagtgcatgaattc	312536	-	receptor_activity	non-small-cell lung cancer(非小細胞肺癌)
19747	F11R	NM_016946.3	914	cagcctagtgcgcgaagtgaagg	312560	-	-	-
19748	NEO1	NM_002499.1	2265	ctgcttaacaatcaatggtaca	312627	-	see also 1595 line	-
19749	PECAM1	NM_000442.2	913	cagcccccacgggaatgatcatgg	312698	-	Nuclear factor NF-kappa-B p50 subunit	graft versus host disease(移植片対宿主疾患)
19750	SEMA3E	NM_012431.1	2132	agcggtttccggagacacagatgt	312788	-	signal_transduction	see also 5320 line
19751	TM4SF6	NM_003270.2	297	ttgtactgtaccgtcattatt	312812	-	see also 2218 line	-
19752	TPBG	NM_006670.3	1643	atgcggaacccagattaacgaac	312854	-	see also 4714 line	-
19753	GAGEB1	NM_003785.2	140	cggcgtagaccatgatctatgt	312859	-	-	-
19754	LY6H	NM_002347.1	340	agatcactcgttgtaacaaagatg	312862	-	-	-
19755	PTX3	NM_002852.2	163	tggccgagaactcggatgattat	312865	-	-	-
19756	CD1B	NM_001764.1	324	tggattcgtcgcgagaagtacaag	312903	-	-	-
19757	OD1C	NM_001765.1	330	tggattaactcgggagattcaag	312922	-	-	-
19758	CD226	NM_006566.1	900	acgaaaaccttgatgatgatgg	312964	-	receptor_activity、 signal_transduction	-
19759	CD2BP2	NM_006110.1	291	tggggggtccagcaaatatgaca	312974	-	-	-
19760	CD53	NM_000560.2	618	agggttgatgacgaagaaga	312994	-	signal_transduction	-
19761	C1QA	NM_015991.1	473	ctgtaccggctactactcttc	312999	-	complement activity	systemic lupus erythematosus(全身性エリテマトードス)
19762	C1QB	NM_000491.2	393	agggtgaatcgggagactacaagg	313006	-	complement activity	systemic lupus erythematosus(全身性エリテマトードス)
19763	C1QG	NM_172369.1	442	aggtagagagggcagatacaagc	313009	-	defense/immunity protein	systemic lupus erythematosus(全身性エリテマトードス)
19764	C4BPA	NM_000715.2	1573	tgttgaggacagcgaaactctcc	313055	-	-	-
19765	C4BPB	NM_000716.2	306	atggttgctggtggagttctgc	313059	-	-	-
19766	DAF	NM_000574.2	1304	caggactaccgcttcttatct	313099	-	-	paroxysmal nocturnal hemoglobinuria(発作性夜間ヘモグロビン尿症)
19767	FHR5	NM_030787.1	638	ttggatcagactcagttcaatgt	313101	-	-	-
19768	HF1	NM_000186.1	3671	gtgtgtaaacgggggatctgtct	313231	-	complement activity	hemolytic-uremic syndrome(溶血性尿毒症候群)、nephropathy(腎臓病)
19769	PFC	NM_002621.1	1220	ctgtatccgacgggaacatgaagt	313242	-	complement activity	renal cell carcinoma(腎臓癌)、properdin P factor complement deficiency(プロペルジンP因子補体欠損症)
19770	CD24	NM_013230.1	192	ttggcccaaatccaaactatgc	313250	-	-	-
19771	CD83	NM_004233.2	646	cggatggcagagaaacacatgaat	313257	-	-	-
19772	HGRG8	NM_016258.1	779	ctgttgtagcgggtccattact	313281	-	signal_transduction	-
19773	AIM2	NM_004833.1	983	tgtgtgaaccccggaagatcaaca	313325	-	-	melanoma(メラノーマ)

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19774	AZGP1	NM_001185.2	374	cagtaacgggtctcactgattgc	313344	-	-	-	-
19775	C1QBP	NM_001212.3	298	ctgcacacagcaggagacaaagc	313351	-	-	see also 794 line	-
19776	CD1A	NM_001763.1	830	tagatacgcctcgaattgcaggt	313373	-	-	-	-
19777	CD59	NM_000611.3	346	tggtagacatcctctatcagaga	313389	-	-	signal transduction	-
19778	CD96	NM_005816.3	673	tggacacagcaaccatcacgataga	313398	-	-	defense/immunity protein	-
19779	CEACAM8	NM_001816.2	891	atggcacattccagcaatacaca	313436	-	-	-	leukemia(白血病)
19780	CNIH	NM_005776.1	291	atgccctctggcattatcatat	313442	-	-	-	-
19781	CTLA4	NM_005214.2	407	ctgtgcggcaacctacatgatgg	313449	-	-	-	-
19782	G1P3	NM_002038.2	416	cagcagctgctcgtatagtaata	313457	-	-	-	-
19783	ICOS	NM_012092.2	556	acgacctaacggtaatacatg	313481	-	-	-	-
19784	KAAG1	NM_181337.2	935	gggatcgcctcctgaaacgaacg	313485	-	-	-	-
19785	NK4	NM_004221.3	515	gagacagtgaggccttattatga	313491	-	-	-	-
19786	RAET1E	NM_139165.1	750	gggggcattcctcctgttagttt	313510	-	-	-	-
19787	SEMA7A	NM_003612.1	1599	gtgtgcacatccattatccagc	313534	-	-	see also 2426 line	-
19788	CAMLG	NM_001745.2	863	ctgcgaagtataataatgatca	313549	-	-	signal transduction	-
19789	CD84	NM_003874.1	301	atgccttaggtccgaactacaat	313563	-	-	see also 2636 line	-
19790	LY6E	NM_002346.1	255	ctgtccgaccaggaactact	313573	-	-	signal transduction	-
19791	NOD27	NM_032206.2	5070	ggggctctacacctaccattca	313616	-	-	-	-
19792	TF2	NM_005423.2	272	aggtctcagacgcgaagaactgt	313621	-	-	-	-
19793	TF3	NM_003226.1	172	tggagtgcttgggtttcaagc	313624	-	-	-	-
19794	PSTPIP1	NM_003978.2	745	ggcaagctgtgctctctacaga	313626	-	-	signal transduction	-
19795	LECT2	NM_002302.1	254	cagggccatggcctaattatgt	313636	-	-	-	pyogenic sterile arthritis(壊疽性膿皮症)
19796	DFNA5	NM_004403.1	866	atgtgcgcattgggatattctcc	313714	-	-	-	deafness(聾)
19797	DSPP	NM_014208.1	1688	tagcacatcagacactaataata	313755	-	-	extracellular matrix structural constituent	-
19798	ITM2B	NM_021999.2	466	acgtgtactactgtgaataaag	313764	-	-	structural molecule	dentinogenesis imperfecta(象牙質形成不全症)
19799	KCNE1L	NM_012282.2	309	ggcgacagcgcctctctctaca	313779	-	-	channel	familial british dementia(痴呆)
19800	NOG	NM_005450.2	751	gtggctgtgctgcagacattct	313783	-	-	-	-
19801	OTOR	NM_020157.2	145	atgtgagtgtgtctactatt	313788	-	-	-	sympalangism(指節癒合症)
19802	TBL1X	NM_005647.2	2105	gtgcactgtgggacatagaacg	313803	-	-	signal transduction	-
19803	TMC1	NM_138691.2	1260	tgggtgtgtgacttcaatg	313815	-	-	transcription regulat	-
19804	USH3A	NM_052995.2	449	ggagcatccagctcaatgtcttc	313859	-	-	see also 9628 line	-
19805	GPHLP	NM_152401.1	699	ttggagcaatcacagactgatttg	313890	-	-	see also 9474 line	-
19806	UNC119	NM_005148.2	740	ccggctgtgtgtgcacataaag	313899	-	-	-	-
19807	SNN	NM_003498.3	369	gggacgcgtcgtggagagaaagg	313901	-	-	-	-
19808	ARR3	NM_004312.1	538	ctgggttccgggaaggaact	313906	-	-	signal transduction	trimethyltin sensitivity(トリメチルスズ過敏症)
19809	OPA3	NM_025136.1	148	cgcgcgaagcagagttcttcaaga	313918	-	-	-	-
19810	PROM1	NM_006017.1	1619	ttggatcacacctactactaaa	313971	-	-	-	retinal degeneration(網膜変性)
19811	RS1	NM_000330.1	525	tggaaaacacccgggtcttctatg	314020	-	-	-	retinoschisis(網膜分離症)

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19812	TULP1	NM_003322.2	768	aggaggcagctacgtgtgataaag	314024	-	see also 2254 line	-
19813	TULP2	NM_003323.1	1460	acggtgtctacacgtctcaatttc	314058	-	-	-
19814	ARRB2	NM_004313.3	643	aaggcctcgaggtagacttga	314065	-	see also 2886 line	-
19815	CLONE249					-	-	-
19815	45	NM_015683.1	661	ttgcccgatcctgctactgtaac	314082	-	-	-
19816	KIAA1376	NM_020801.1	379	aagtaagctggagctgaatcaga	314087	-	see also 7975 line	-
19817	STIP1	NM_006819.1	137	gtgctactccgaagctttaagc	314125	-	see also 4787 line	-
19818	SYN2	NM_003178.2	856	ctgtcgctatctataagacact	314154	-	see also 2156 line	-
19819	CALCYON	NM_015722.2	382	tgggtcggtgctgcatgtac	314165	-	signal_transduction	-
19820	CART	NM_004291.1	203	aagaagctcaagagtaaacgtgt	314167	-	signal_transduction	-
19821	CBLN1	NM_004352.1	545	ggttaatcgaccatgatcatct	314168	-	-	-
19822	HAP1	NM_003949.2	320	tggaccgctgtattccaagg	314180	-	-	-
19823	MOG	NM_002433.1	738	caggatccggaatgaaggttct	314198	-	see also 1567 line	-
19824	CNTNAP2	NM_014141.3	647	aggtcgctggagctcagaattg	314220	-	-	-
19825	F13B	NM_001994.1	1722	aggagggcctattgttagatgg	314333	-	translation	-
19826	GP5	NM_004488.1	1207	ctgagccgctcggtgacttagg	314353	-	-	Factor XIII deficiency(-) rheumatoid arthritis(関節リウマチ)
19827	MNRN	NM_007351.1	255	tcggcggagatagctacaactcc	314370	-	-	-
19828	TRO	NM_016157.2	128	cggatatagggtgctctatttc	314507	-	-	-
19829	BYSL	NM_004053.2	632	gggtccggagagattattctaa	314549	-	-	-
19830	CSN1S1	NM_001890.1	358	ttgtagactgaacgaatacaacc	314569	-	-	-
19831	NPHS1	NM_004646.1	3567	gggacccctctcagtagaagtc	314614	-	-	-
19832	NPHS2	NM_014625.1	837	gggaatcaaaagtgagagaatag	314628	-	see also 5796 line	-
19833	TG737	NM_006531.2	369	acggcagcttagacacctatgc	314639	-	see also 4565 line	-
19834	IBSP	NM_004967.2	259	caggccacgatatatttaca	314706	-	-	-
19835	SFTPC	NM_003018.1	594	tggcgggtgctgctctactaca	314721	-	surfactant	-
19836	FMR2	NM_002025.1	3953	atgtaccagatgtttatacctcc	314787	-	see also 1314 line	-
19837	GLIPR1	NM_006851.1	236	ctgcttgaatccaatacaagt	314797	-	-	glioma(グリオーマ)
19838	PSORS1C	NM_014068.1	666	tggctccaactctatgtactcg	314837	-	-	-
19839	TTC3	NM_003316.2	5060	aggggagtagtgcagaggttaac	314840	-	-	-
19840	APBB1P	NM_019043.2	1259	aggagtcgccagtatataaagt	314868	-	see also 7676 line	-
19841	C12orf2	NM_007211.2	518	tggggcagtagtctagtgtgt	314878	-	signal_transduction	-
19842	FLJ10324	NM_018059.2	531	cagtgaagaagccctcttgcac	314897	-	signal_transduction	-
19843	NMB	NM_021077.2	370	aggaggtcgtgtgtaaaatact	314909	-	signal_transduction	peptide hormone
19844	PKD1L2	NM_052892.2	3507	caggcagccgacaggttgaacc	314934	-	channel、 signal_transduction	-
19845	RASSF1	NM_007182.4	811	agggcctgtgcgaaagtcttg	314974	-	cell_cycle、 signal_transduction	lung cancer(肺癌)、Ewing's sarcoma(ユーストング肉腫)
19846	RASSF2	NM_014737.1	617	atgcgcacacgagtagtattgg	314988	-	see also 5925 line	-
19847	RASSF3	NM_178169.2	149	aggacgcgcagagacttcttctc	315002	-	signal_transduction	-
19848	RASSF4	NM_032023.3	620	ccggcgacacccggttctctatca	315018	-	see also 9061 line	-
19849	RASSF5	NM_031437.1	756	cggcaactacacgggttctcatca	315030	-	see also 9028 line	-
19850	RASSF6	NM_177532.2	439	ttgacgatctctctctatttagt	315054	-	signal_transduction	-
19851	HOMER2	NM_004839.1	152	acggagcgaaggtgatcataaac	315077	-	-	-
19852	CD47	NM_001777.2	928	gcggcgtgtatccaatgcacg	315120	-	signal_transduction	-

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19853	SIRPB1	NM_006065.1	930	cagcttcgacctcattagagaac	315129	-	signal transduction	-	-
19854	PARK7	NM_007262.3	136	gagaggtcatccctctagatgt	315134	-	-	-	Parkinson disease(パーキンソン病)
19855	EDARADD	NM_080738.2	373	ctgcacacgaaattcagatatga	315150	-	-	-	-
19856	ALP1	NM_012301.2	4121	acgggaacacgacgttaggaac	315222	-	-	-	-
19857	ALP	NM_014476.1	258	ctgatgcgacgacgagattaaa	315226	-	-	-	-
19858	ARHGAP2	NM_020824.1	1843	aggttctcggacaatacaagaaa	315265	-	-	-	-
19859	ASB10	NM_080871.2	546	gaggatttcocgcttaacatcc	315382	-	-	-	-
19860	ASB11	NM_080873.1	538	gagatccctctggcaataatgt	315393	-	-	-	-
19861	ASB13	NM_024701.2	405	gagcggaggttccgaatgtga	315403	-	-	-	-
19862	ASB14	NM_130387.4	650	ttgatcaagttcaggatctgtca	315428	-	-	-	-
19863	ASB15	NM_080928.2	603	aagcgaatgtagcaaatgcata	315455	-	see also 9543 line	-	-
19864	ASB17	NM_080868.1	263	ctgttaacgaaccaaggattaca	315460	-	-	-	-
19865	ASB2	NM_016150.3	2142	ttgcgcagctcgggttcgaagg	315511	-	-	-	-
19866	ASB3	NM_016115.3	866	aggacagttgacgttacctatt	315533	-	see also 6671 line	-	-
19867	ASB4	NM_016116.1	192	ctgttgcctagctataattga	315572	-	-	-	-
19868	ASB5	NM_080874.2	421	ttgcgtgactccgttattcaacg	315606	-	-	-	-
19869	ASB6	NM_017873.2	714	acgggtgtcagatccacaatact	315628	-	-	-	-
19870	ASB8	NM_024095.2	120	gagccttaattccgaacaattgc	315639	-	-	-	-
19871	ASB9	NM_024087.1	655	ttggggcaacattgaccataaga	315663	-	-	-	-
19872	C20orf163	NM_080749.2	1031	ctgtccgccttagtgatacaaaag	315670	-	-	-	-
19873	CTEN	NM_032865.3	959	cagtgctgtagtcagctatatg	315677	-	-	-	-
19874	DODC2	NM_016356.1	1066	atgatcgcactctaaagtaaca	315702	-	see also 6840 line	-	-
19875	EPS	NM_005864.2	1737	atggcgcgagagtagtactatgt	315711	-	-	-	-
19876	ENIGMA	NM_005451.2	1227	ttgcgagcggagactatgagaaga	315719	-	-	-	-
19877	ERBB2IP	NM_018695.1	2197	aagtcgtagcacttagtaaac	315781	-	cell cycle, signal transduction	-	-
19878	FLJ12428	NM_022783.1	1304	gggccacacgagcagattgtcatgg	315881	-	see also 8477 line	-	-
19879	FLJ12987	NM_025170.2	649	gtgacttgggacaaagcattatt	315903	-	-	-	-
19880	FLJ14249	NM_022460.2	120	aggtacgggggcaagatgtct	315949	-	-	-	-
19881	FLJ20967	NM_022071.2	352	ctgtcggagatgtacatagatcc	315961	-	-	-	-
19882	FLJ21687	NM_024859.1	139	ctgctcaggggcaaaactatgtac	315988	-	-	-	-
19883	FLJ23209	NM_024895.3	407	gggaacgctcatcctcactcaact	315997	-	-	-	-
19884	FLJ30934	NM_152760.1	540	ggctcagagaccacaactcttttg	316009	-	-	-	-
19885	FLJ32798	NM_173496.2	1430	cagtatcggcgacaaaactaata	316036	-	-	-	-
19886	FLJ33505	NM_152317.1	287	atgctgtcgtgtgtgttaagt	316046	-	-	-	-
19887	GIPC2	NM_017655.3	419	tcgcctcggagatctttatttg	316071	-	-	-	-
19888	GIPC3	NM_133261.1	856	caggagtttgacgcctgttttaga	316100	-	-	-	-
19889	GOPC	NM_020399.1	1237	tggaacatgttaactgtttgacc	316127	-	see also 7864 line	-	-
19890	GORASP2	NM_015530.3	853	cagtttaatccccctctttgtca	316154	-	-	-	-
19891	HSH2	NM_032855.2	1449	caggagttggcaccacaatggtag	316167	-	-	-	-
19892	HSPC163	NM_014184.1	316	gtgttgatccacaagaaataca	316182	-	-	-	-
19893	KIAA1365	NM_020794.1	2700	agcgtaccatgggagatcatg	316361	-	-	-	-
19894	KIAA1444	NM_032512.1	713	ggggagctgcgtctgtaaac	316418	-	-	-	-

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19895	LMO7	NM_005358.3	2132	aagatgatattgtatgaagg	316455	-	-	-
19896	LNK	NM_005475.1	2007	ccggactcggactacgaatgg	316528	-	-	-
19897	LNX	NM_032622.1	1566	ttggaccgccggaggagtcataagc	316566	-	see also 9261 line	-
19898	LOC11898	NM_173791.2	1162	aggccgtctaaagtacgttgt	316601	-	-	-
19899	LOC51248	NM_016484.3	182	cagccgattctctatgatgaat	316685	-	see also 6875 line	-
19900	MAG11	NM_173515.1	1949	ggcgattctccgacatcatgaag	316724	-	kinase_related	-
19901	MGC2793	NM_145064.1	676	cagtacgtctgtgtcaaatct	316741	-	see also 9773 line	-
19902	MGC32065	NM_153271.1	1220	aagatcggctggacacittcaag	316751	-	-	-
19903	MGC39715	NM_152628.2	942	ggaggtacggcactatggatac	316774	-	-	-
19904	MGC5395	NM_024060.1	323	ggaggacgacggcgtcttctgtc	316793	-	-	-
19905	MPP4	NM_033066.1	1312	tggctacggtcgaagttcttta	316817	-	-	-
19906	MPP5	NM_022474.2	2151	ctgtacggcgaagtgcataactct	316872	-	see also 8392 line	-
19907	NCK1	NM_006153.3	534	tgtgtgcgtgtgtagctacaatgg	316906	-	see also 4255 line	-
19908	NOXO1	NM_144603.2	374	gcgcaggagttggacgaattca	316933	-	-	-
19909	PDLIM2	NM_021630.4	529	ccggcctggagacataatcgtgg	316936	-	-	-
19910	PDZK2	NM_024791.2	295	ctggcgggtgaacaatgatgtgt	316949	-	signal_transduction	-
19911	PDZRN1	NM_153371.2	1835	aggagcagccgagtagcttcagc	316998	-	-	-
19912	PSCDBP	NM_004288.2	734	ttgtggaccgggaatcgattatcc	317030	-	see also 2873 line	-
19913	RACGAP1	NM_013277.2	647	aagactatcaaccatgatgaat	317035	-	-	-
19914	RHPN1	NM_052924.1	1408	cagcgtcactggcccaagatgc	317043	-	signal_transduction	-
19915	RHPN2	NM_033103.3	1895	atgactctgttagccatgatga	317055	-	signal_transduction	-
19916	RIMS2	NM_014677.1	3256	gtgtcgttggcctctgtatagc	317136	-	see also 5872 line	-
19917	RP1L1	NM_178857.4	2323	atgctcagtgccacgatatattc	317160	-	-	-
19918	SCRIB	NM_015356.1	269	tggacgtgtccgggaacgatatc	317180	-	-	-
19919	SDCBP2	NM_015685.3	436	aagfcatacggcgcgataagattgt	317189	-	-	-
19920	SDP35	NM_017779.2	751	atggcaatacaagtaaacgtgg	317207	-	-	-
19921	SH2B	NM_015503.1	3149	aggtccatccggagtatatcatgg	317230	-	see also 6441 line	-
19922	SH2D2A	NM_003975.2	745	cagtaacagcccaatcaataaaca	317237	-	SH3/SH2 adaptor protein	-
19923	SHANK1	NM_016148.1	6281	aagccgtttggcgctaaacctct	317267	-	-	-
19924	SHD	NM_020209.1	523	ctggaaagccgcacactgagtattt	317270	-	-	-
19925	Shrml	NM_020859.1	6170	cagtgagcatgttggttaactgc	317313	-	signal_transduction	-
19926	SLA2	NM_032214.2	583	aagtcacaggcagagagataaac	317320	-	transcription_regulat	-
19927	SSB1	NM_025106.2	470	ccgatcgtcaatgtcttttga	317327	-	-	-
19928	SSB3	NM_080861.3	379	cggagaggaagacgagattttcg	317337	-	-	-
19929	STAC	NM_003149.1	533	aggggtttcggcgcttactacagc	317352	-	-	-
19930	STMN4	NM_030795.2	196	ctgaataagtcgtctcaaaaata	317378	-	-	-
19931	SYNJ2BP	NM_018373.1	497	atgagataccgggcaacaactttg	317395	-	-	-
19932	TENC1	NM_015319.2	3952	ctgcgaattccagcaaatgctc	317417	-	-	-
19933	TJP2	NM_004817.1	2391	ctggagtggtccggttaataacc	317470	-	see also 3347 line	-
19934	WSB2	NM_018639.3	859	ttgtcaacgctcttaccatacc	317495	-	-	-
19935	XTP1	NM_018369.1	115	aagatgcggttaccggaacatcg	317506	-	see also 7423 line	-

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19936	CHL1	NM_006614.2	1723	caggcggtatcatatcatgaaa	317613	-	see also 4676 line	-	
19937	FLJ38991	NM_173827.1	823	cagaagtataatcgtacttgt	317711	-	signal_transduction	-	
19938	HAN11	NM_005828.1	666	tggctcgtgctggatgttgacc	317746	-	signal_transduction	-	
19939	INPP4A	NM_001586.1	2611	aggttggcgatcacgtctttaca	317787	-	see also 1065 line	-	
19940	LRDD	NM_018494.2	2658	atcgagagaccggtttctgagc	317816	-	signal_transduction	-	
19941	RSU1	NM_012425.3	389	cagtgcctcagaacctcaaac	317823	-	signal_transduction	-	
19942	SH3GL2	NM_003026.1	932	ccgagctctgtacgacttgaac	317845	-	signal_transduction	-	
19943	SH3GL3	NM_003027.2	1345	aagacagacaggttcaacattcc	317864	-	see also 2029 line	-	
19944	UNC5CL	NM_173561.1	617	ttgcactctcaggttcaaacact	317877	-	signal_transduction	-	
19945	NCAM2	NM_004540.2	2252	ctgccaatagatgggatatctt	317961	-	see also 3097 line	-	
19946	NINJ2	NM_016533.4	397	gggacaactctctactactaca	317970	-	-	-	
19947	EVA1	NM_005797.2	517	aagaacccacctgatttgagg	317979	-	-	-	
19948	JAM2	NM_021219.2	1053	aaggatggcatccgtttgctaga	317999	-	-	-	
19949	VCAM1	NM_001078.2	2296	aagggtatatagtcttttaga	318071	-	see also 672 line	-	
19950	ZAN	NM_003386.1	1516	ggattcgatcacacatgtatgg	318089	-	-	-	
19951	ODA08	NM_030790.2	1189	ggagcgcgtcgaatgtttaaagt	318167	-	-	-	
19952	COL17A1	NM_000494.2	3762	tggaggactctgcttacttta	318239	-	-	-	epidermolysis bullosa(表皮水疱症)
	DKFZP761								
19953	D0211	NM_032039.1	424	gtcccgctgttatctatgacttt	318255	-	-	-	
19954	MDS028	NM_018463.2	673	aggtgtgcgtatgaattctac	318276	-	-	-	
19955	PPFIA2	NM_003625.2	1557	tgggtacaggttgatagacttct	318317	-	see also 2432 line	-	
19956	SGCE	NM_003919.1	484	tggagactgaagggcataattg	318377	-	see also 2678 line	-	
19957	HNT	NM_016522.2	1206	gtgaagacgaatacttggaaatt	318402	-	-	-	cell adhesion molecule
19958	CASPR3	NM_033655.1	768	aagcagatcgcgcgagagaagaag	318411	-	-	-	
19959	ADRM1	NM_007002.2	231	cagacggagcagactcgtatttca	318414	-	-	-	
19960	C1orf38	NM_004848.1	395	ccggcagctccactttatcaaac	318427	-	-	-	
19961	CASPR4	NM_033401.2	2051	cagcaacaacggctctgacttaac	318480	-	see also 9420 line	-	
19962	caspr5	NM_130773.2	3148	atgcattcgtctcttacttga	318615	-	-	-	
19963	GD34	NM_001773.1	135	ggcctggaccggcgttgcctgc	318648	-	-	-	transcription factor leukemia(白血病)
19964	CD99	NM_002414.3	239	cggatgggttgcatttatcc	318666	-	-	-	
19965	CDON	NM_016952.1	1229	cggctattcgttggtatgacagc	318709	-	-	-	
19966	CNTN2	NM_005076.2	1941	gggcaactaccggaggaactaagt	318774	-	-	-	
19967	DCBLD1	NM_173674.1	601	tggaaacgagctagccattttg	318809	-	see also 10108 line	-	
19968	DSCAM	NM_001389.2	1066	ctgcatcacggcggtcagataca	318865	-	see also 955 line	-	
19969	E48	NM_003695.1	98	cagcaactgcaagcattctgtgg	318982	-	-	-	transmembrane ephrin
19970	EFNB1	NM_004429.3	1521	cggctccggttgcgtatcttcc	318987	-	-	-	
19971	ESDN	NM_080927.2	1267	gtgatcgcggatctcctaataac	319014	-	see also 9542 line	-	
19972	IGSF1	NM_001555.1	4069	tggaaactgccgtttccaataaa	319145	-	see also 1062 line	-	
									Gareis-Mason syndrome(Gareis Mason 症候群)、hydrocephalus(水頭症)、MASA syndrome(MASA症候群)、spastic paraplegia(痲痺)
19973	L1CAM	NM_000425.2	3510	gaggcccgaccgacgatgaagatga	319169	-	-	-	
19974	LSAMP	NM_002338.1	564	caggggagcagtcaggcaaatatg	319186	-	see also 1513 line	-	

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19975	MCAM	NM_006500.1	968	caatggcgctatgaatgtcagg	319209	-	-	-	lung squamous cell carcinoma(肺扁平上皮癌)、melanoma(メラノーマ)
19976	MFGE8	NM_005928.1	554	atggacacgaattgatttcac	319221	-	-	structural molecule	-
19977	NINJ1	NM_004148.2	373	ttgtcaagtacgacaccttaaac	319231	-	-	-	-
19978	NRXN1	NM_004801.2	3908	caggcgtgaagctacacatttc	319329	-	see also 3336 line	-	-
19979	NRXN2	NM_015080.2	4053	acgtgggcacgacacattacc	319368	-	-	-	-
19980	OMD	NM_005014.1	645	tggatggcgctagtaacttgacc	319403	-	see also 3510 line	-	-
19981	OMG	NM_002544.2	1648	aagaatctcagggttctaaccc	319439	-	see also 1639 line	-	-
19982	PUNC	NM_004884.1	742	cggacaatgagaggtacacattg	319475	-	-	-	-
19983	SRPX	NM_006307.2	551	ggagcggaccgctcacatgtatg	319498	-	-	-	-
19984	TROAP	NM_005480.2	2247	gagcgcctcaaatcgtgttaac	319533	-	-	-	-
19985	DAP4	NM_014902.2	2091	atgcctagtggcgtataagaaga	319543	-	-	-	-
19986	EFNA5	NM_001962.1	412	cagaggggctgactaccattatga	319556	-	see also 1241 line	-	-
19987	EFNB2	NM_004093.2	663	ccggaacattcggggaacaacatc	319602	-	see also 2762 line	-	-
19988	IFRD1	NM_001550.1	1292	ttggtctgaacacatgtatatit	319624	-	see also 1057 line	-	-
19989	SPAG6	NM_012443.2	254	cagaacgcgggtgtaattgtcttt	319637	-	-	-	-
19990	MLF1	NM_022443.2	249	gaggagagcctcataatcgtaga	319679	-	-	-	leukemia(白血病)、myelodysplastic syndrome(骨髄異形成症候群)
19991	CRISP1	NM_001131.2	469	atggacaacaacggatgatgaca	319715	-	-	-	-
19992	NP25	NM_013259.1	364	cagaacacacagacatotttcaga	319735	-	-	-	-
19993	PNMA1	NM_006029.3	1001	gggtggacccgctgcaagatgtgc	319746	-	-	-	-
19994	CLN8	NM_018941.2	840	ctgcgcgatggtcttaacctaacc	319853	-	-	-	ceroid-lipofuscinosis(セロイドリポフスチン蓄積症)、epilepsy(てんかん)
19995	DAB1	NM_021080.3	839	tcggggagacaaagtattgtcaag	319867	-	see also 8080 line	-	-
19996	FCMD	NM_006731.1	1024	tgtatcgacaatgcaacattat	319923	-	see also 4750 line	-	-
19997	MAB21L2	NM_006439.3	1674	cggccagccgctcaacaactacc	319945	-	see also 4504 line	-	-
19998	MOBP	NM_006501.1	64	cggaaacacttcagcatcacatgc	319947	-	-	-	-
19999	NEURL	NM_004210.3	1227	tgggtggaccgcaaggaattctgg	319952	-	-	-	-
20000	NUMBL	NM_004756.2	324	gcgggcaccatgaacaagtattacg	319953	-	-	-	-
20001	SEMA3A	NM_006080.1	600	ggggcgagactttgctattctcc	319992	-	see also 4222 line	-	-
20002	SEMA6B	NM_020241.2	413	gtgtcgaaactctgtaaaaggtgc	320050	-	receptor_activity	-	-
20003	SEMA6C	NM_030913.2	953	cgcgtagcccgagtagtataaac	320078	-	-	-	-
20004	EVC	NM_014556.2	2545	cgcctgtgtgaggcggtattacc	320102	-	-	-	Weyers acrodermal dysostosis(先端骨形成不全症)、Ellis-van Creveld syndrome(エリス・ファンクレフェルト症候群)
20005	CSRP3	NM_003476.1	223	gtgtgctatggcgcgagatattgg	320113	-	-	-	-
20006	VAMP5	NM_006634.2	133	cggaaattatgcgtacaacttc	320119	-	-	-	-
20007	CAV3	NM_001234.3	368	tgggcgggtggtgccatgcattaa	320124	-	-	-	muscular dystrophy(筋ジストロフィ)、Rippling muscle disease(筋肉疾患)、elevated serum creatine phosphokinase(血清クレアチン・ホスホ
20008	SGCB	NM_000232.2	333	aagtggcctgcttcgatttaagc	320139	-	see also 171 line	-	-
20009	SGOD	NM_000337.3	693	gtgtctaactcagcttataacacagg	320168	-	-	-	limb girdle muscular dystrophy(肢帯型筋ジストロフィ)



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20010	SGCG	NM_000231.1	566	aagccactattactgtagatga	320197	-	-	Duchenne-like muscular dystrophy(デュシェンヌ型筋ジストロフィー)、limb girdle muscular dystrophy(肢帯型筋ジストロフィー)
20011	KRTHA2	NM_002278.2	906	acgtgagggaatgttcaaatg	320218	-	-	-
20012	SCEL	NM_003843.2	993	aagtcogattaaagttaatacaaa	320238	-	-	-
20013	TNFAIP2	NM_006291.2	1911	aagattgagggtggccactatgc	320270	-	-	-
20014	ANKRD7	NM_019644.1	417	tagtgccgttataacaataat	320279	-	-	-
20015	MEA	NM_014623.1	501	ctgcctgggctcggagagatatot	320289	-	-	-
20016	CCNI	NM_006835.2	1549	tggatacaaaaggctctataatg	320309	-	-	cyclin-dependent protein kinase、regulator
20017	FSHPRH1	NM_006733.1	1137	ttgatgttaggtccagctaattgt	320335	-	see also 4753 line	-
20018	SPAG9	NM_003971.3	1993	aagtacaacaaggtaaccaatgg	320424	-	see also 2714 line	-
20019	D8S2298E	NM_005671.1	87	tggatcccggtataggaatca	320482	-	see also 3942 line	-
20020	SPAG1	NM_003114.3	1029	ctgcgtcgtgctactacatataa	320521	-	-	-
20021	VGY2	NM_004678.1	528	gtgggcttctgacatatattgt	320563	-	-	-
20022	XKRY	NM_004677.1	1101	gggggtgggacatacaaatctaca	320574	-	-	-
20023	RQCD1	NM_005444.1	168	gtggattcatttggtagctattg	320581	-	see also 3792 line	-
20024	FLJ10292	NM_018048.2	140	ccggacggaaagcttagatagtc	320601	-	-	-
20025	SEMGI	NM_003007.2	1385	acgacgcgaaacccattatttaca	320614	-	-	-
20026	AGRV1	NM_001612.4	1008	tggacaggagtgcaaatatat	320630	-	see also 1069 line	-
20027	AMN	NM_030943.1	433	ccgccacgacgacgtctcttcttc	320638	-	-	-
20028	CLPTM1	NM_001294.1	1408	gagtcctcgacaaagtgtatga	320652	-	-	-
20029	DKK2	NM_014421.1	1345	caggccgaagtctgtaccacaaa	320668	-	signal_transduction	-
20030	DKK3	NM_013253.3	1128	cagagagggtcccgatgagatgtg	320681	-	-	-
20031	GTL3	NM_013242.1	679	gcgagcataccggcacaattaca	320691	-	see also 5357 line	-
20032	LOC56920	NM_020163.1	1775	acggcacgggacacaaatagcaco	320714	-	receptor_activity	-
20033	NRLN1	NM_145234.2	1237	gaggtccacgcttggactatctcg	320742	-	-	-
20034	NUMB	NM_003744.3	1552	gagggcagcccgatggttagaaga	320769	-	see also 2564 line	-
20035	SEMA3F	NM_004186.2	289	cgggtccggtctctcattcaaga	320785	-	receptor_activity	-
20036	SEMA6D	NM_020858.1	1013	ttggccagcgatgctgcttattta	320830	-	see also 8000 line	-
20037	TCP11	NM_018679.2	959	aagcaccttagtctcttcaatca	320920	-	transmembrane receptor	AAAD deficiency(AAAD欠損症)
20038	UPK2	NM_006760.1	104	aggggctgcagacttcaacatct	320931	-	-	-
20039	WHSC2	NM_005663.2	1393	atgttcaagacgggccaacaaagt	320945	-	transcription_regulat	Wolf-Hirschhorn syndrome(Wolf-Hirschhorn症候群)
20040	DOCK9	NM_015296.1	979	tgtttccggttttagatagctacc	320976	-	or	-
20041	MGC10471	NM_030818.2	406	cggcatgggtgttcgttaacaatg	321129	-	translation	-
20042	NDP52	NM_005831.3	266	tggagagacaccccgtagattta	321141	-	-	-
20043	ALS2CR12	NM_139163.1	1305	ctggagagattggcctctattact	321198	-	-	-
20044	ANGPTL3	NM_014495.1	857	caggtagttccattggacattaatt	321220	-	signal_transduction	-
20045	ANGPTL4	NM_016109.2	534	cagcagatccagcaactcttcc	321241	-	apoptosis	atherosclerosis(粥状硬化症)
20046	BICD2	NM_015250.1	2314	aggtgtgacgagtagattacaca	321258	-	see also 6291 line	-
20047	C14orf102	NM_017970.2	1385	aaggacggcagcatctctatctca	321283	-	see also 7185 line	-

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20048	C14orf44	NM_152445.1	148	gagggagcgcgcagatattcc	321320	-	see also 9888 line	-
20049	C20orf11	NM_017896.2	691	gtgtgagtagaagtttaaccaagc	321351	-	-	-
20050	C20orf96	NM_153269.1	1122	gggaaccccgagaggtcatattt	321366	-	-	-
20051	C8orf13	NM_053279.1	868	cagagcattcgatgaagcctatagc	321369	-	-	-
20052	DACT1	NM_016651.4	2050	agggcggtagtgagccaaacctaag	321400	-	-	-
20053	FLJ20366	NM_017786.1	1937	ggggacggatccctgtgtataac	321433	-	-	-
20054	GCC2	NM_014635.3	3224	ctggctcgtatgagacattaca	321520	-	-	-
20055	GOLGA1	NM_002077.1	2364	tggcccttcctgcagcaataac	321587	-	see also 1341 line	-
20056	GOLGA2	NM_004486.3	1678	ttgttaagctgactaattgagaac	321611	-	-	-
20057	GOLGA5	NM_005113.2	916	tggccctcgttactccaagatcc	321640	-	see also 3587 line	-
20058	GOLGIN-	NM_015003.3	1064	agggacacgtgacacagttgaagg	321697	-	-	-
20059	K6IRS2	NM_080747.1	1456	ttggcgctcaagcagttatagc	321701	-	-	-
20060	KIAA0373	NM_014684.1	2162	cagtcctacagacacagtttag	321737	-	-	-
20061	KRT23	NM_015515.3	1569	aggaatcaagagatcatctcc	321845	-	-	-
20062	KRT24	NM_019016.1	976	gggaacgacctgaccaaattact	321859	-	-	-
20063	KRT6IRS	NM_033448.1	1536	gggcagctgccaacacgattacaag	321877	-	-	-
20064	KRTHB1	NM_002281.2	51	atgacctgcggatcaggtttgg	321880	-	-	monilethrix(連珠毛)
20065	MCRS1	NM_006337.3	1412	gggtgacggcccatctacatcg	321885	-	-	-
20066	MGC33295	NM_152505.2	1209	ggagctcgggaagactcttagcgc	321908	-	-	-
20067	MLPH	NM_024101.4	1047	ctgcaactcgggtcgaatgtcatc	321928	-	-	-
20068	OLFM2	NM_058164.1	883	ggacaacgtgggtgcaaatacc	321945	-	receptor_activity	latrotoxin receptor
20069	PENT2	NM_006031.3	10075	ctgcaccccgatgattaaacagt	322044	-	-	-
20070	PES1	NM_014303.2	1713	ctgtaccagaagatcatgtttgg	322061	-	-	-
20071	PP1R16A	NM_032902.4	751	tggagctggggcccaacatcaat	322063	-	-	-
20072	ProSAPIP1	NM_014731.2	1891	aagctgtctgtacocaaagaattt	322066	-	-	-
20073	PSTPIP2	NM_024430.2	505	cagaatgccggggacaaagatga	322077	-	-	-
20074	SH3BP1	NM_031892.1	1688	ttgactcgtgtgtatctact	322122	-	see also 9046 line	-
20075	SPAG4	NM_003116.1	539	aggggctgagcgtgtgtttatcc	322134	-	-	-
20076	SPAG4L	NM_080675.3	241	ctgttgcctgtcgcgcaacaatga	322139	-	-	-
20077	TACC1	NM_006283.1	1689	aaggcaaaagtcgcgtttaataac	322177	-	see also 4375 line	-
20078	TACC2	NM_006997.1	1549	tggacggggatgggcttaacaag	322225	-	see also 4883 line	-
20079	TCPI0	NM_004610.1	1195	atgcctcggggagggttaagatc	322250	-	-	-
20080	TCPI0L	NM_144659.1	312	ccggagtcataagatgcttga	322252	-	-	-
20081	TPD52	NM_005079.1	575	ttgaattcggctgcacaaatgctag	322262	-	-	breast cancer(乳癌)
20082	UVRAG	NM_003369.2	1345	ggggtctagatcaacaatcaaaag	322301	-	see also 2273 line	-
20083	VAMP1	NM_014231.3	460	gtgccatcatcgtggtagttatt	322316	-	-	-
20084	VAMP2	NM_014232.1	380	atgcatcatctgggagtgatttg	322321	-	-	-
20085	VEZATIN	NM_017599.2	296	tggattccgactcgaactcattac	322328	-	-	-
20086	ZWCC1	NM_014941.1	3915	cagatctcctcggaattgtttacg	322422	-	-	-
20087	DCTN4	NM_016221.2	521	tggcacgacgtagaactatattg	322449	-	see also 6725 line	-
20088	EPLIN	NM_016357.1	518	ggggtc-gatatccccacatcaagg	322488	-	see also 6841 line	-
20089	KRTAP11-1	NM_175858.2	90	ttgttcagtgggcccaagttacc	322535	-	-	-

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20090	KRTAP13-1	NM_181599.1	560	gtggatcagggtcttactattga	322539	-	-	-
20091	KRTAP8-1	NM_175857.2	88	atggctaccgcctgggataago	322542	-	-	-
20092	MGC45562	NM_152349.1	508	aagcctaccacaaagtagagttgg	322547	-	-	-
20093	C14orf31	NM_152330.2	497	cagcaagggtatcagcccaatttg	322566	-	-	-
20094	C20orf42	NM_017671.2	649	ggccttgctgcgcgaatttga	322618	-	see also 7090 line	-
20095	CDC42EP4	NM_012121.3	417	tggacgaacagccctcttcca	322670	-	-	-
20096	DOCK2	NM_004946.1	2278	ttgttggtcgaggacattatt	322714	-	see also 3444 line	-
20097	EMS1	NM_005231.2	798	gagcccggttggtttgagatc	322789	-	-	breast cancer(乳癌)、head and neck squamous cell carcinoma(頭頸部扁平上皮細胞癌)、squamous cell cancer(扁平上皮癌)
20098	FARP2	NM_014808.1	915	ctggtccaaagtcctgtaactaa	322820	-	see also 6000 line	-
20099	FLJ10210	NM_018027.2	966	aggtcaagcaatcgtaactaca	322877	-	see also 7213 line	-
20100	FRMD1	NM_024919.2	535	gggacggcgacctgtactactgc	322913	-	-	-
20101	NICAL	NM_022765.2	1892	gagtcacgtctcggatttgtct	322929	-	signal_transduction	-
20102	URP2	NM_031471.4	1960	ccgaattgtcacagagtatatcg	322964	-	-	-
20103	C14orf2	NM_004894.1	100	aagccctactacacacaaagtta	322965	-	-	-
20104	HAX1	NM_006118.2	762	cagccccagcccaaatctattt	322974	-	-	-
20105	TOMM70A	NM_014820.1	767	ctgttagccgataaagtctttaa	322991	-	see also 6014 line	diabetes(糖尿病)
20106	MRV1	NM_006069.2	2676	ctgggctctcacattctctataa	323044	-	-	-
20107	PSMD1	NM_002807.2	1531	acgccagcaatgatctgttga	323096	-	cell_cycle	-
20108	PSMD10	NM_002814.2	102	ggagggtgtgtcttaacctaat	323132	-	-	-
20109	PSMD12	NM_002816.2	460	ttgatactacgaatggttacc	323150	-	see also 1833 line	-
20110	ADFP	NM_001122.2	180	atggatcgtgtcagttgattcc	323240	-	-	-
20111	JPH3	NM_020655.2	2465	cggagtcgccattctgttatta	323265	-	-	-
20112	PIGS	NM_033198.2	438	ctgaactgtgtactgtatctga	323270	-	-	-
20113	SART2	NM_013352.1	2579	aaggcgagcgaacacgataaat	323355	-	see also 5405 line	-
20114	SDF2L1	NM_022044.1	598	gtgcaaacacgcacacatactgg	323367	-	-	-
20115	VPREB3	NM_013378.1	365	aagacgacgggattactactgc	323371	-	-	-
20116	PSMD11	NM_002815.2	255	atgtacgaccttcttgattcc	323372	-	see also 1832 line	-
20117	PSMD13	NM_002817.2	293	ctgtccctcgtggaataattct	323401	-	see also 1834 line	-
20118	PSMD3	NM_002809.2	1330	atggacactacaccccaattatc	323434	-	see also 1827 line	-
20119	PSMD4	NM_002810.1	966	caggcggaatcagcagacattga	323455	-	-	-
20120	PSMD5	NM_005047.2	1476	gtgaaggccatactatgtgaaa	323491	-	-	-
20121	SART1	NM_005146.3	1938	acgaggaacccgactgtgaatagg	323497	-	-	-
20122	TGOLN2	NM_006464.1	1154	tagcgagaaagatgacctttatc	323505	-	see also 4536 line	-
20123	GOLPH4	NM_014498.2	1437	ggaggtgtctcgaataatgatgt	323526	-	see also 5728 line	-
20124	D4S234E	NM_014392.2	257	atgacggccctgatgtcaatca	323543	-	see also 5655 line	-
20125	HMP19	NM_015980.3	281	gtgaagacaaagacggaataca	323564	-	signal_transduction	-
20126	ZDHHC3	NM_016598.1	722	aagtaactctctgtttacaat	323574	-	see also 6937 line	-
20127	OD63	NM_001780.3	517	gtgtgtggggctgctaactaca	323586	-	-	melanoma(メラノーマ)
20128	LAMP2	NM_002294.1	207	gtgcggtcttatgcattggaact	323594	-	-	diabetes(糖尿病)
20129	CD68	NM_001251.1	778	tggacattctcggctcagaatgc	323646	-	-	leukemia(白血病)
20130	LAMP1	NM_005561.2	1179	cagtcggcaattctcacaagtgc	323670	-	-	-

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20131	LAPTM5	NM_006762.1	698	gcgtgtggcgggtgtctacagattg	323679	-	-	-
20132	PXMP2	NM_018663.1	289	atgcggtttacgggtttcttttc	323694	-	-	-
20133	SRP72	NM_006947.2	881	atgcggaaggagtagagatttaag	323719	-	kinase_related、 signal_transduction	-
20134	MGC4293	NM_031304.2	983	gagtggtctctggacaigtatga	323749	-	-	-
20135	BRD7	NM_013263.1	1706	cagaccctctcgaacatgatct	323771	-	-	-
20136	ICA1	NM_004968.1	207	aggatcgtatgtctcaagataag	323777	-	see also 5381 line	-
20137	MVP	NM_005115.3	948	cggaccggatggcaagaatcagc	323823	-	see also 3450 line	-
20138	NFKBIE	NM_004556.1	230	cggttcggctgccaccagtaacc	323834	-	transcription factor、 cytoplasmic	-
20139	SNCG	NM_003087.1	175	aagaccaaggagaatgtgtaca	323838	-	-	breast cancer(乳癌)
20140	TUB	NM_003320.3	643	cagcaccaggtaccgaagtccaag	323845	-	-	obesity(肥満)
20141	FLJ39369	NM_152363.2	1206	ctgcgagcggctgtatccaga	323859	-	-	-
20142	LEMD2	NM_181336.2	1295	aggacatggagcgcctatccat	323876	-	-	-
20143	ACRC	NM_052957.2	248	caggcaggttgcatccttaattgt	323878	-	-	-
20144	AKIP	NM_017900.1	567	gagacgaagcagatcaagtctg	323924	-	-	-
20145	BARD1	NM_000465.1	1655	ctgcggcctgtcattatcacaga	323979	-	see also 373 line	-
20146	BOP1	NM_015201.3	2225	ggaggtgctggagctatctcttc	324006	-	see also 6277 line	-
20147	BRD4	NM_014299.1	795	tggctttccacgggtaccaca	324017	-	see also 5607 line	-
20148	C5orf6	NM_016605.1	1069	gcggccctcgttggaattgaca	324039	-	-	-
20149	COIL	NM_004645.1	1121	tggagggctctggctcaaatgg	324082	-	see also 3164 line	-
20150	CTNBL1	NM_030877.3	536	ttgtcggacacagatacacaga	324080	-	see also 8958 line	-
20151	D21S2056	NM_003683.3	1000	cagaaagcgtctctacaagaatga	324116	-	-	-
20152	DKFZp761					-	-	-
20152	B128	NM_152437.1	1942	aagggtttctttcatatcacaga	324121	-	-	-
20153	DNTIP1	NM_052951.2	691	atgaatctacacacctgtgttg	324136	-	-	-
20154	DXS9928E	NM_004699.1	900	gagtggaacctcttcaactttg	324142	-	-	-
20155	FAM9A	NM_174951.2	1039	aagctgccaaggacacataaaga	324148	-	-	-
20156	FBXL4	NM_012160.3	1628	aagttatgcagccttaaacgact	324206	-	see also 5158 line	-
20157	FHL2	NM_001450.2	725	gtgactgaaggactgtgtttac	324229	-	-	Alzheimer disease(アルツハイマー病)
20158	FJX1	NM_014344.2	987	tagtaaatggaccgaactaatc	324241	-	-	-
20159	FLJ13479	NM_024706.3	620	ctgtcctgtaccagaacatttcc	324244	-	-	-
20160	FLJ14011	NM_022103.2	1340	aggtgtcaatcggcattcatcc	324255	-	transcription_regulat	-
20161	FLJ21628	NM_030613.1	604	aagcatgcatctattgtacatc	324265	-	or	-
20162	FLJ30726	NM_153018.1	1331	caggcggacctctcactttatg	324292	-	-	-
20163	FLJ32053					-	transcription_regulat	-
20163	FLJ32053	NM_152484.2	2239	cagtgctcactgtcttaatttaca	324313	-	or	-
20164	FLJ36870	NM_173658.1	768	gagttcggccttatatcacatc	324325	-	-	-
20165	FLJ38002	NM_152412.1	1068	ttggttgaatttactactaata	324344	-	-	-
20166	FLJ38451	NM_175872.3	1618	aggcgcgtgtcaactacaagtgt	324376	-	-	-
20167	FLJ38705	NM_173832.2	631	gtgtggcggatctttaagacaga	324386	-	-	-
20168	FLJ90764	NM_173656.1	2023	cagagcccggaatcctttgtctca	324401	-	-	-

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20169	HIRIP3	NM_003609.2	1768	gtgtgcccacgcaaacataag	324409	-	-	-
20170	HSPC11	NM_016391.2	578	atgctgggacacagcgtataatcg	324416	-	-	-
20171	KIAA0103	NM_014673.2	739	atgtcggcaagtcattgtcttc	324439	-	see also 5854 line	-
20172	KIAA0924	NM_014897.1	1124	agggcgcagtcagatttgtgataa	324460	-	-	-
20173	KIAA1190	NM_145166.2	480	ttgtccctccatgagcagataaca	324478	-	-	-
20174	KIAA1615	NM_020951.1	1589	ttggagtaggtagtagaacttact	324497	-	-	-
20175	LOC14821	NM_138286.1	733	ctgtcgtcacacattacaacaca	324503	-	-	-
20176	LOC84661	NM_032574.1	373	cagacagttgtgctactcttatt	324512	-	kinase_related,	-
20177	LOC90589	NM_145233.2	586	gtgactctccctactcttogaaca	324516	-	signal_transduction	-
20178	LPIN2	NM_014646.2	948	cagacagcgtgtccttaagagtgga	324529	-	-	-
20179	MDM1	NM_017440.2	197	ctggacttagatcagatcaattta	324564	-	-	-
20180	MGC13071	NM_032689.2	1388	tagtagcccatgaacttagtatac	324626	-	see also 7012 line	-
20181	MGC27466	NM_152373.2	612	atgagcacaaagtcttaataccaat	324637	-	transcription_regulat	-
20182	MGC45408	NM_152289.1	1079	atgccttaattgatcacattcaaa	324651	-	or	-
20183	NPAT	NM_002519.1	1365	ttgagtcogtgccttaatttgaat	324692	-	-	-
20184	NUCKS	NM_022731.1	459	cagcgtatgaagatttcttaattgg	324801	-	-	-
20185	NUSAP1	NM_016359.1	1157	ttgtctgtgtccctcaactatga	324808	-	-	-
20186	PCNP	NM_020357.1	242	taggtagtcagacagacaaagaaa	324823	-	-	-
20187	PELP1	NM_014389.1	700	cagttggcctgtgagtgatttc	324828	-	see also 5649 line	-
20188	PHLDA1	NM_007350.1	1016	agggcctatcctggcgtcacaatcc	324844	-	-	-
20189	PLINP-1	NM_052850.2	229	gggggtgggtcccggtctgtgtatg	324846	-	-	-
20190	PRAC	NM_032391.2	129	atgttggtgccccatttctcaga	324849	-	-	-
20191	RBBP5	NM_005057.1	241	ctgtaattgatggccgaattgtca	324854	-	see also 3526 line	-
20192	RNF144	NM_014746.2	1086	ttgaggtcttgagcagatgtttc	324891	-	-	-
20193	SH3BGR1	NM_031469.1	398	ccgatactgtggagattatgaca	324900	-	-	-
20194	SH3BGR1	NM_031286.1	106	ccggctcccgccgaatacaagttcc	324903	-	-	-
20195	UBCE7IP5	NM_014948.2	716	cggcgggtatcctctgtataaagc	324909	-	see also 6146 line	-
20196	UTX	NM_021140.1	1461	cagctccggcacaatagaaataa	324931	-	see also 8100 line	-
20197	UTY	NM_007125.3	2626	ttgttaggcagtaattgtatagc	324977	-	-	-
20198	WDR13	NM_017883.3	1013	aggggtgcgttcgcccaatgatga	325009	-	-	-
20199	WDR3	NM_006784.1	1294	gtgatgtgcggactttgttcattc	325046	-	-	-
20200	WRB	NM_004627.2	423	gtggctgtcgtgcggcagagtaaatg	325100	-	-	congenital heart disease(先天性心臓疾患)
20201	ZFP1	NM_153688.1	636	ttgagtgagaatttctgaataca	325166	-	-	-
20202	ZNF285	NM_152354.2	264	aagttacotcttcgaagaagtc	325176	-	transcription_regulat	-
20203	ZNF491	NM_152356.2	784	ttggcacagttctgttcgaatcc	325190	-	transcription_regulat	-
20204	ZNF493	NM_175910.4	691	gtggcacatcttcttaccatttc	325194	-	or	-
20205	ZNF501	NM_145044.1	573	ttgtttccgtaaacagtcgaatc	325199	-	transcription_regulat	-
20206	ZNF502	NM_033210.3	531	aagcaccctcctgaattatttagt	325210	-	transcription_regulat	-

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20207	ATF7IP	NM_018179.3	1854	cagctaaacgtcgtcgatatat	325249	-	see also 7304 line	-	
20208	C14orf18	NM_021178.2	966	atggagcgaatcgtcgatatca	325317	-	-	-	
20209	LOC11284	NM_080666.1	1282	acgagtagcaggttcagtaagt	325365	-	-	-	
20210	LRP10	NM_014045.2	1610	cgcctcaactaccagactttct	325376	-	-	-	
20211	WDR23	NM_025230.3	947	tggctgcttggagtagatata	325394	-	-	-	
20212	FLJ12847	NM_024596.1	933	ctgtgggaggtcttcattgatg	325439	-	-	-	
20213	MDC1	NM_014641.1	6094	cagcatgcctcgtgctctataagc	325518	-	-	-	
20214	PAXIP1L	NM_007349.2	534	tggccttggtaagttctatgg	325521	-	see also 5082 line	-	
20215	CD9	NM_001769.2	425	ctgcgggcoatoctggggatatcc	325596	-	-	-	esophageal cancer(食道癌)、breast cancer(乳癌)、lung cancer(肺癌)、pancreatic cancer(膵臓癌)
20216	CDW52	NM_001803.1	64	ctggttatggtacagatacaaac	325601	-	-	-	
20217	DSR2	NM_003720.1	661	tcggcgtgtgttcctatgctaga	325627	-	-	-	
20218	GARP	NM_005512.1	1636	ctgcctcaagcggcctaattctg	325639	-	-	-	
20219	GPM6A	NM_005277.2	724	ttgctatggttcactactctatg	325658	-	see also 3702 line	-	
20220	GYPE	NM_002102.2	247	ttgtgtgttggatgatcatc	325671	-	-	-	
20221	HEM1	NM_005337.2	822	aagtaaatggagcgtggattatc	325699	-	see also 3724 line	-	
20222	JTB	NM_006694.2	898	gagtgctctccatgctctaat	325744	-	-	-	hepatocellular carcinoma(肝臓癌)、pancreatic cancer(膵臓癌)、prostate cancer(前立腺癌)
20223	KAI1	NM_002231.2	184	gggctcagcctgtatcaaaagtc	325750	-	-	-	
20224	M11S1	NM_005898.2	2178	tggctatcaacggagtagtatc	325804	-	see also 4104 line	-	
20225	MLANA	NM_005511.1	174	ctgctcatcggtctgttgattg	325810	-	-	-	melanoma(メラノーマ)
20226	MOX2	NM_005944.3	462	ctgcctcaccgtctatgtacagc	325824	-	-	-	arthritis(関節炎)
20227	NET-5	NM_006675.2	299	ttgcctagtagcaccattgtcatg	325832	-	-	-	
20228	NET-7	NM_012339.2	682	caggaaacagacagaggtgtca	325844	-	-	-	
20229	NGK7	NM_005601.2	162	ttgctttgagcaccgattctctg	325849	-	-	-	
20230	PODXL	NM_005397.2	1289	ctgatatgcagagcagtcacagc	325859	-	-	-	
20231	PTPRCAP	NM_005608.1	349	ggagctggggtccacagacaaatga	325865	-	-	antimicrobial peptide	
20232	SYNGR3	NM_004209.4	402	atgtgcgcttcagcaaatcagc	325867	-	-	-	
20233	T1A-2	NM_006474.3	543	cagtcacgcgcgaagacaaagt	325874	-	-	-	
20234	TM4SF13	NM_014399.2	247	gcgcctcaaacctctttacacc	325879	-	-	-	
20235	TM7SF1	NM_003272.1	843	ggagctcattcctttgtattatg	325897	-	-	-	
20236	TMEM4	NM_014255.2	575	atgggattcttcggatcaatcc	325914	-	-	-	
20237	TMEM5	NM_014254.1	504	aagtcacatcgtaggagaacacaca	325930	-	-	-	
20238	ADIPOR1	NM_015999.2	653	ttgacattcctcagacacaaat	325957	-	see also 6600 line	-	
20239	ADIPOR2	NM_024551.2	504	tggcagtgatcctcctcatggt	325976	-	-	-	
20240	AMIGO2	NM_181847.2	1784	atgccattcattcattctcagt	326031	-	see also 10258 line	-	
20241	ANTXR2	NM_058172.1	187	aagctagcgaatgaacaaattca	326040	-	-	-	
20242	ARL6IP	NM_015161.1	556	ctgatagtgacttctctactatt	326070	-	-	-	
20243	BM88	NM_016584.2	524	ctggctctgtgagaactccaacc	326073	-	-	-	
20244	C11orf15	NM_020644.1	258	atgatctgccctccctataaag	326077	-	see also 7901 line	-	
20245	C19orf4	NM_012109.1	375	ctgcgtggaagcctatgtgaagg	326089	-	-	-	
20246	C1orf8	NM_004872.3	987	ttgtcctctcggtaggtatttg	326110	-	see also 3385 line	-	
20247	C20orf103	NM_012261.2	557	tgggtggatcgccatagcact	326120	-	-	-	

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20248	C20orf165	NM_080608.3	267	cagccgaactcccaaatcc	326130	-	-	-	-
20249	C20orf46	NM_018354.1	957	cagatccagcgggatgtgt	326138	-	-	-	-
20250	C20orf52	NM_080748.1	354	gcggcaccttggcacatcatg	326146	-	-	-	-
20251	C20orf54	NM_033409.2	941	ctgcctcgtggcgtcttggcc	326153	-	-	-	-
20252	C20orf75	NM_152611.2	1800	ttgtccttgagcctgatatcca	326161	-	-	-	-
20253	C21orf61	NM_178817.2	275	aagctgaagcccaaacattc	326165	-	-	-	-
20254	C22orf20	NM_025225.2	879	ggagatgccctcggagatatt	326175	-	-	-	-
20255	C22orf5	NM_012284.2	645	ctggggaagacttattccatcg	326189	-	-	-	-
20256	C3orf4	NM_019895.1	1500	atgtatccggtaattggatgg	326211	-	see also 7752 line	-	-
20257	C6orf31	NM_030651.2	663	ccggttgggcaagcccatatgcagg	326217	-	-	-	-
20258	CAV2	NM_001233.3	832	ggtaggacgctgcttctctct	326227	-	-	-	-
20259	CDC91L1	NM_080476.3	702	gggaagccctagtggaatcatt	326247	-	-	-	-
20260	CEACAM7	NM_006890.1	614	cagcgcccaaaaagatgacatag	326272	-	-	colorectal cancer(大腸癌)、colorectal cancers(結腸直腸癌)	-
20261	CGI-119	NM_016056.1	437	aagctttcatctgactactaca	326283	-	-	-	-
20262	CGI-147	NM_016077.1	218	tggagccttcgagtagcttgg	326291	-	-	apoptosis	-
20263	CKAP4	NM_006825.2	399	caggcgctcaactcttctctct	326313	-	-	-	-
20264	CLN6	NM_017882.1	549	gtggaaccccatcatcaagaat	326323	-	-	-	-
20265	CUZD1	NM_022034.3	2705	tgtgactgttagcgacaatcaca	326381	-	-	-	-
20266	DC-	NM_030927.1	561	ctgggacctcaacgtctacttca	326386	-	see also 8242 line	-	-
20267	DGAI1	NM_172004.2	273	tcggacttcccgctagaactcg	326400	-	see also 8965 line	-	-
20268	ELOVL5	NM_021814.2	599	aggagtatgggaaaggcaatata	326415	-	-	-	-
20269	ELOVL6	NM_024090.1	795	gggtgaagccgtgatgactct	326446	-	see also 8588 line	-	-
20270	FAM14A	NM_032036.1	290	ttggggaattcaactcttcttc	326466	-	-	-	-
20271	FAM14B	NM_145249.1	449	tgggactctctgacatctaaag	326471	-	-	-	-
20272	FLJ10134	NM_018004.1	630	gtgtggcagatatctatgttcc	326486	-	-	-	-
20273	FLJ22233	NM_024959.2	1031	aggaggaacccgggtatcttaat	326507	-	-	-	-
20274	FLJ22800	NM_024795.1	55	atggacatctctgcaatggattca	326518	-	-	-	-
20275	FLJ30002	NM_152341.2	728	ctgcttgggggactggttaagt	326537	-	see also 9841 line	-	-
20276	FLOT1	NM_005803.2	590	gggcacatcagtggttagtaca	326541	-	-	-	-
20277	GHITM	NM_014394.1	961	gtggcaatgtacgggtgattagt	326572	-	-	-	-
20278	GPSN2	NM_004868.1	74	ccgcgtggatggcctattacato	326578	-	-	-	-
20279	GYP A	NM_002099.2	447	ctgacacagacgtgctttaagt	326598	-	-	-	-
20280	HCS T	NM_014266.3	212	ctggcaactcaggctcttggcc	326602	-	-	-	-
20281	HSPC039	NM_016097.2	223	atgaaccttattcgatctgtaag	326608	-	-	-	-
20282	HTGN29	NM_020199.1	341	gtgtgtatcacggagcattcca	326615	-	-	-	-
20283	HUCEP11	NM_014858.1	8	aggttgttcagcccttaatgagc	326632	-	-	-	-
20284	IFRG28	NM_022147.1	337	aegtgcctcgtgctcccaataga	326638	-	-	-	-
20285	IGSF8	NM_052868.1	1947	ctgtccttggtaaccatcactgc	326652	-	-	receptor_activity	-
20286	ITM2A	NM_004867.2	833	tagaaccttccccaacgaattta	326673	-	-	-	-
20287	ITM2C	NM_030926.3	343	ctgtacatctacagatatttc	326675	-	see also 8964 line	-	-
20288	KIAA0133	NM_014777.1	4388	ctgcctacggctcctaaagtgc	326765	-	-	-	-
20289	KIAA0152	NM_014730.1	708	gagtttgcgaagggtactatga	326788	-	-	-	-
20290	KIAA0247	NM_014734.1	623	ctgtctatagtgcttctactgc	326800	-	-	-	-

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20291	KIAA0779	NM_015008.1	983	caggagagcgaatagatgtga	326823	-	-
20292	LAPTM4B	NM_018407.3	1033	gtgtgtacccccgtatgtga	326878	-	-
20293	LEPROTL1	NM_015344.1	268	atgataacgttgttaagaact	326895	-	-
20294	LOC111621	NM_138461.1	351	gagatacggctgttcagtaaga	326902	-	-
20295	LOC11644	NM_138786.1	188	ccgttgacatttggagtgataat	326909	-	-
20296	LRRTM1	NM_178839.3	995	gtggctatctggatcacatc	326937	-	-
20297	LRRTM2	NM_015564.1	991	aagtttggctgcaatggatttg	326959	-	see also 6475 line
20298	MAL2	NM_052886.1	551	atgacgacagcttgttatgttg	327006	-	-
20299	MGC35450	NM_153708.1	233	ttggaagcagtaactggaattgc	327007	-	-
20300	MPDU1	NM_004870.1	26	gagcgagcaggaccgcttaaacg	327008	-	-
20301	MPRG	NM_017705.2	1258	cagatagctggagccactactct	327025	-	-
20302	NIFIE14	NM_032635.2	557	tgatgataacacgctatgatct	327036	-	-
20303	NMA	NM_012342.1	987	ggggcaggttgcaagttagact	327047	-	-
20304	NPDC1	NM_015392.2	989	ctgtccctggagcggcataaaga	327050	-	-
20305	PANX1	NM_015368.3	1460	cagggatcgaccacatgctact	327076	-	-
20306	PANX2	NM_052839.2	1404	ccgtccgcccaccactacaagg	327084	-	-
20307	PANX3	NM_052989.2	501	gagttccgacccctagtgttct	327092	-	see also 9472 line
20308	PAQR3	NM_177453.2	686	ctggctcaggtgtactgtgaca	327127	-	see also 10163 line
20309	PAQR6	NM_024897.2	856	aggagcttcgctctaccattcc	327137	-	-
20310	PKD1L1	NM_138295.2	2441	ggcgactctcaggtatcactgg	327200	-	-
20311	RFT1	NM_052859.2	169	aggaaatctgttgcgtgtaaat	327307	-	see also 9439 line
20312	SECTM1	NM_003004.1	474	tcgtggacacacaggaataaac	327342	-	kinase related
20313	SEZ6L	NM_021115.2	2940	aagatgtcgtactattccaacc	327384	-	-
20314	SLC24A4	NM_153646.1	1396	gtgaactattggatgatacact	327413	-	see also 10003 line
20315	SMP1	NM_014313.2	380	aagtcggaggtgtagttacagt	327431	-	-
20316	STARD3N	NM_032016.2	330	ttgaccttattctgaacatta	327518	-	-
20317	SYNGR4	NM_012451.2	523	ttgcggcaccggcttcaagaca	327533	-	-
20318	TACSTD1	NM_002354.1	474	ggcatgagagcgggctcttaag	327543	-	see also 1522 line
20319	TDE1	NM_006811.2	875	ttgcgttggctcttatatat	327583	-	see also 4786 line
20320	TDE2	NM_020755.2	792	ttggtctctgtaagtctata	327621	-	see also 7945 line
20321	TED	NM_015686.1	766	gggagcgggtgtagcaactgtatc	327644	-	receptor activity
20322	TM4-B	NM_012466.2	554	acgagccagcagcactattctaca	327666	-	-
20323	TM4SF12	NM_012338.2	249	gtggttcacggctcagttggo	327674	-	see also 5298 line
20324	TM7SF3	NM_016551.1	1610	gagcggcggagtgaacaacattct	327738	-	-
20325	TMC2	NM_080751.1	2027	aagcctcccgatccaacaacttc	327783	-	see also 9522 line
20326	TMEFF1	NM_003692.2	318	ggagctcagcgttaagatttgt	327792	-	-
20327	TMEM10	NM_033207.2	760	ccgttaaccgtctactatagaaa	327826	-	-
20328	TMEM15	NM_014908.1	748	ggccttggctggaggtgtatca	327832	-	-
20329	TMEM2	NM_013390.1	1448	gtgtcgaagacagacactatc	327887	-	see also 5419 line
20330	TMEM7	NM_031440.1	353	gtgcccccaacctctgttgagg	327983	-	-
20331	TNMD	NM_022144.1	1017	ccgcgtctgtgaaccttactag	328011	-	see also 8313 line
20332	UPK1A	NM_007000.2	570	ctgtccggagcgggaaacttca	328020	-	-
20333	UPK3A	NM_006953.1	649	gagcgatgctgctcactcc	328028	-	-
20334	VANGL1	NM_138959.1	1431	tggattacggagatggaattgtgt	328058	-	see also 9642 line



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20335	ZDHC1	NM_013304.1	1505	gaggaaaggcgcgtatataag	328073	-	-	-	-
20336	ZDHC11	NM_024786.1	869	tgggaagccggaattattggtc	328086	-	-	-	-
20337	ZDHC12	NM_032799.3	419	gagcgaaccaccactcttgt	328091	-	-	-	-
20338	ZDHC2	NM_016353.2	1270	gagcaatctgcattaccattgg	328119	-	see also 6833 line	-	-
20339	ZDHC4	NM_018106.2	1159	aagtcacccggaattcaacc	328136	-	-	-	-
20340	ZDHC5	NM_015457.1	652	atgaacagggtacggtaaatc	328151	-	-	-	-
20341	ZDHC6	NM_022494.1	1506	gaggttacgatacttggttat	328201	-	-	-	-
20342	ZDHC7	NM_017740.1	592	tggcaacggggtcatcttaac	328210	-	-	-	-
20343	ZDHC8	NM_013373.1	524	ctgcatcgccgctcgaaactatc	328226	-	-	-	-
20344	ZDHC9	NM_016032.1	690	gcgacacccgctcgatcaaga	328239	-	-	-	-
20345	SNAP91	NM_014841.1	2927	aggacccattagcggatcttaac	328291	-	see also 6046 line	-	-
20346	MAGEA1	NM_004988.3	445	ggggccaagcacctctgtatcc	328296	-	-	neuroblastoma(神経芽細胞腫)、melanoma(メラノーマ)	-
20347	SSFA2	NM_006751.3	3265	tggcagtagaagcgtgataact	328362	-	-	-	-
20348	CACNA2D	NM_006030.1	1435	cggacccggtcgctgtttacttt	328386	-	-	-	-
20349	CACNA2D	NM_018398.1	2778	tggcgactcctgataatcacagc	328486	-	see also 7440 line	-	-
20350	CACNA2D	NM_172364.2	2274	tggcgggtgactggatctactgc	328521	-	-	-	-
20351	CKLFSF2	NM_144673.2	667	aagtcggcgatccatgaatctcc	328569	-	-	-	-
20352	CKLFSF3	NM_144601.2	734	ttgtacatcctgtgttgcaact	328576	-	-	-	-
20353	CKLFSF4	NM_178818.2	657	ttggcgactcgccatctgcagt	328585	-	see also 10209 line	-	-
20354	CKLFSF5	NM_138460.2	629	cggcgtactggagtctctcatc	328592	-	-	-	-
20355	CKLFSF6	NM_017801.2	336	aagttgtatcaaatgtacttta	328597	-	-	-	-
20356	CKLFSF7	NM_138410.2	704	aagcatatggcgtctctataaga	328621	-	see also 9617 line	-	-
20357	DOCK4	NM_014705.2	4884	tagacgcagcccgcttaagtacc	328752	-	-	-	-
20358	FLJ30532	NM_144724.1	899	atgtattaccggaccattctct	328783	-	-	-	-
20359	FLJ33990	NM_153226.1	1116	ttggagcgccattcgtaaatgg	328843	-	see also 9978 line	-	-
20360	GP2	NM_001502.1	687	caggacctcaatagtctgtatgt	328851	-	-	-	-
20361	KIAA0792	NM_014698.1	761	ctggacaagagaccctatagttt	328869	-	-	-	-
20362	MAMDC2	NM_153267.3	2460	ctggctacggagcactgattgaat	328946	-	see also 9985 line	-	-
20363	MGC3295	NM_025246.1	1545	ttggttagcacagctacaacattt	328982	-	-	-	-
20364	STOML3	NM_145286.1	956	tggcgtcagctatgataaccaca	329011	-	-	-	-
20365	TDE2L	NM_178865.2	750	ctggtacgagccctctctct	329014	-	-	-	-
20366	TERE1	NM_013319.1	372	ctgtcggagagagctgcaaacg	329019	-	-	-	-
20367	CSPG5	NM_006574.2	758	ttgactatcagctgatttoacc	329044	-	-	-	-
20368	NESG1	NM_012337.1	991	gagattaagcgatcaatgatga	329067	-	-	-	-
20369	FGL1	NM_004467.2	1010	tagccgttatgcacataataaga	329078	-	-	-	-
20370	CHGB	NM_001819.1	1660	ggagtaggggaactgtcaacc	329103	-	-	peptide hormone	-
20371	CRISP2	NM_003296.1	702	ctgtccaatcaaatagtagctaa	329121	-	-	-	-
20372	FHR-3	NM_021023.1	339	cagggttaactctcaagaggtgc	329132	-	-	-	-
20373	HFL3	NM_005666.1	770	aagaacaggtgacatagtgaat	329137	-	-	-	-
20374	PRH1	NM_006250.1	124	aagatgttccctcgtatcatca	329140	-	gpcr, receptor_activity, signal_transduction	-	dental caries in children(う蝕症)

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20375	PRH2	NM_005042.1	124	aagacgtcccttggttaataca	329141	-	-	rhodopsin-like receptor	-
20376	SCGB1D1	NM_006552.1	244	tagatacagtgccctatgagaaa	329144	-	-	-	-
20377	SCGB1D2	NM_006551.2	154	ctgttagacttcttcttcattag	329146	-	-	-	-
20378	SEMG2	NM_003008.2	1745	aagacagaataccaataataca	329155	-	-	-	-
20379	ASPN	NM_017680.2	470	gtgctattcaacgaggttgacatt	329159	-	-	-	-
20380	CRTAP	NM_006371.2	644	cagagcagtgccgggcatacaacg	329197	-	-	-	-
20381	DCN	NM_001920.2	241	ctggctggaacgctttcaacaga	329208	-	-	-	-
20382	GPC2	NM_152742.1	291	cggggatatagtcttaaacctaa	329231	-	-	receptor activity	-
20383	C9orf19	NM_022343.2	143	cgggaggctcaacagattctga	329247	-	-	-	-
20384	DKFZP434B044	NM_031476.1	771	ttgggagaacgcggctactttg	329258	-	-	-	-
20385	FGL2	NM_006682.1	289	aaggaatacgtataatagctctaaa	329274	-	-	see also 4716 line	-
20386	LOC57151	NM_020426.1	396	gtgcaacgattataagagttact	329324	-	-	-	-
20387	LOC83690	NM_031461.2	883	caggctcgtggtggcaactagtaa	329348	-	-	-	-
20388	MGC26768	NM_144634.2	514	aggaaccgctgccatattgcatg	329393	-	-	-	-
20389	MGC39497	NM_152436.1	151	aggagagcgtagactttatcaac	329400	-	-	-	-
20390	R3HDM1	NM_178491.1	642	tggcagtgcccggtactcaagatgg	329426	-	-	-	-
20391	SPACA3	NM_173847.2	337	aagctctacggctggttggaact	329432	-	-	-	-
20392	C6orf135	NM_024839.1	366	cgggagcccaagcagattccaaac	329440	-	-	-	-
20393	182-FIP	NM_020772.1	670	aggaagcgtaggcgaatagtcg	378684	-	-	-	-
20394	24432	NM_022914.1	992	tcgcaaccaagacttagatgttc	384854	-	-	-	-
20395	24b2/STA	NM_198993.1	628	agggccttgcatgtaagatgtgc	440387	-	-	see also 10353 line	-
20396	384D8-2	NM_014551.3	283	ctgcctgctgtacagtaagaag	340830	-	-	-	-
20397	7A5	NM_182762.1	764	ttgatccgcccacacatgcttaac	435165	-	-	-	-
20398	7h3	NM_033025.3	1105	gtggactgtaccgtcttctggg	402608	-	-	-	-
20399	AASDHPP	NM_015423.2	246	ctgctggcagtgccgcatcgattca	352598	-	-	see also 6406 line	-
20400	AAT1	NM_033364.2	1073	cagcgacgcagtgatatacaaat	403727	-	-	see also 9414 line	-
20401	ABG1	NM_022070.3	1834	ctggactcggtaatagcaattca	382108	-	-	-	-
20402	ACMSD	NM_138326.1	337	gggactccagaagttcgtattaga	407495	-	-	-	-
20403	ACN9	NM_020186.1	110	gggcccagcagtagctgaaagacg	375862	-	-	-	-
20404	AGY-3	NM_080658.1	1001	cgggtaccgccgtgtcttaaac	406564	-	-	-	-
20405	AD024	NM_020675.3	525	cagaatctgcagactgtgtataa	377913	-	-	-	-
20406	AD031	NM_032021.2	464	ctgttgattgcagatgtaatat	377613	-	-	-	-
20407	AD158	NM_032270.2	236	ttggcggttttgatgtacttta	399248	-	-	see also 9130 line	-
20408	AD24	NM_022451.9	464	aagcattgaacgcattatagataa	382794	-	-	see also 8360 line	-
20409	ADAMTS2	NM_025003.2	277	ctgaacgcagatgcactctttct	392899	-	-	see also 8832 line	-
20410	ADAMTSL	NM_052866.2	624	tgttcaggaggcagataaatcc	404547	-	-	-	-
20411	ADCK2	NM_052863.2	1265	ctgcgtacgaagctcagaatct	404429	-	-	-	-
20412	ADCK4	NM_024876.2	1033	cggggtccagccgttggttaagg	391630	-	-	kinase related	-
20413	ADCK5	NM_174922.2	1040	ggggctggscagctgcacacatag	428685	-	-	-	-
20414	ADMP	NM_145035.2	384	gggcaacgactcttcactttt	413020	-	-	-	-
20415	AEBP2	NM_153207.2	731	aagacatagagccatattcttta	422134	-	-	see also 9975 line	-

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20416	AF15Q14	NM_020380.2	5148	ttgtagtgcactggtattgatg	377309	-	-	-
20417	AFAP	NM_021638.3	1700	caaggagacggcacttcattatg	380970	-	-	-
20418	AGR2	NM_006408.2	195	aggttgaggtagcacaactcatct	335402	-	-	-
20419	AGTRAP	NM_020350.3	447	gtgctaccagagcagattgactca	376822	-	-	-
20420	AHI1	NM_017651.3	3637	aaggagagatcccttcotttaag	360244	-	see also 7078 line	-
20421	AHSA1	NM_012111.1	373	atgaatggagcgtaaacactaac	337500	-	see also 5140 line	-
20422	ALG1	NM_016108.2	476	aggacatcgacccatcagtatcc	356283	-	-	-
20423	AIM1L	NM_017977.1	194	tggtaagtgcacattgacatagg	365016	-	-	-
20424	AK7	NM_152327.1	1275	gcgattgtggcccttaacgatgt	415654	-	kinase_related	-
20425	AKNA	NM_030767.2	1007	gagaaacgaccagattctctgc	394897	-	-	-
20426	AKR1CL2	NM_031436.2	235	aggagtcgttgcaagatcaagg	396958	-	-	-
20427	ALEX1	NM_016608.1	1291	ctggagctaaagactgttaaccaac	358402	-	-	-
20428	ALEX2	NM_014782.3	826	tgggcctaaagccgaatcagtag	343402	-	see also 5963 line	-
20429	ALEX3	NM_016607.2	1055	toggatcccatagtttaaggaaa	358370	-	-	-
20430	ALG10	NM_032834.1	671	ttgttagttccagcctatatatt	401877	-	-	-
20431	ALLC	NM_018436.2	653	tgggaattgcacgacttagagtat	371493	-	-	-
								Alstrom syndrome(アルストレム症候群)、 diabetes mellitus(糖尿病)、Alzheimer disease(ア ルツハイマー病)、diabetes(糖尿病)
20432	ALMS1	NM_015120.2	11387	ctgtcgaatcagatatattgacc	348470	-	-	-
20433	ALS2CR17	NM_198945.1	2071	atgttgccaatccaactcttt	440074	-	see also 10350 line	-
20434	ALS2CR19	NM_057177.3	1994	tgggattggccctcggaagattac	406158	-	cell_cycle	-
20435	ALS2CR4	NM_152388.1	1389	atggctctctgtgttgattatc	416160	-	-	-
20436	AMACO	NM_198496.1	706	ggagcggaaactgctctgaata	438601	-	-	-
20437	AMICA	NM_153206.1	599	ggagcagcccaaggagcgaatagt	422103	-	-	-
20438	AMOT	NM_133265.1	979	ggcgctctcggaggagcagcagga	407172	-	-	-
20439	AMOTL1	NM_130847.1	2455	ctgcagcagcgatctcgttaaga	407089	-	-	-
20440	AMOTL2	NM_016201.2	918	cagtagccctcagttgtactagc	356549	-	-	-
20441	AMSH-LP	NM_020799.1	117	ggcagtcctgctcccttaagcagc	379047	-	-	-
20442	ANAPC1	NM_022662.1	5960	ctgcacactatagacttagaagg	383684	-	see also 8427 line	-
20443	ANC2H01	NM_016331.1	1479	tagagtttaagtgataagataaac	357068	-	see also 6814 line	-
20444	ANGPTL5	NM_178127.2	1416	atgcacttaggacggatttcagg	430517	-	-	-
20445	ANGPTL6	NM_031917.2	1179	gggcttgaaacccgtgtatcagc	397298	-	-	-
20446	ANKMY1	NM_016552.1	246	ttggccacagcagcgatcatacc	358081	-	-	-
20447	ANKRD10	NM_017664.1	936	tagctcgtatcgaatacatgga	360472	-	-	-
20448	ANKRD13	NM_033121.1	801	aagacaacttggcggagtgatag	403388	-	-	-
20449	ANKRD15	NM_015158.1	3809	cagtcacagcagcagatagacatgg	348694	-	cell_cycle	-
20450	ANKRD6	NM_014942.1	1296	ttgtcgtatggaacctctaatca	346242	-	see also 6130 line	-
20451	ANP3B	NM_006401.1	275	ttgtttggacaattgcaaatca	335384	-	-	Alzheimer disease(アルツハイマー病)
20452	ANP3C	NM_012403.1	173	cagacttaccaaaagttaagtgg	338134	-	-	-
20453	APBB2	NM_173075.1	1721	aagtagttgttcggttaacaact	424483	-	signal transduction	protein binding
20454	APCDD1	NM_153000.3	693	cgtgtcacaaatcccacttatbac	421773	-	-	-
20455	APG10L	NM_031482.3	527	cagcagcgtccgaagtgttaaa	397182	-	see also 9038 line	-
20456	APG16L	NM_017974.2	1368	tggacaattgcgaggtgtctca	364949	-	see also 7186 line	-
20457	APG4B	NM_013325.3	369	cagcgtcctcaacgcattcatcg	338711	-	see also 5399 line	-

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20458	APH-1A	NM_016022.1	181	gggacocgcttcggttatcatc	355900	-	-	-	-
20459	POBEC3	NM_152426.1	238	aggttatcttcgggtttgagaac	416625	-	-	-	-
20460	POBEC3	NM_145298.3	919	aagcctatgtcggaaagaaagc	414264	-	-	-	-
20461	3Apr	NM_016085.2	408	gggaocctgtgtccaaacttca	356248	-	-	-	-
20462	APTX	NM_017692.2	842	ccagatgatgagccatgtacatct	360905	-	-	-	-
20463	APXL2	NM_133456.1	1085	gagcgcttcaggcgaagcttgg	407219	-	-	-	-
20464	AQR	NM_014691.1	790	cagctggcacgattgggaattaga	342226	-	-	-	see also 5891 line
20465	ARC	NM_015193.2	826	cggcgtggcacgcagagatcttgc	349548	-	-	-	-
20466	ARG99	NM_031920.2	813	aagcgatctaccactacagaaca	397322	-	-	-	-
20467	ARH	NM_015627.1	296	aggtgtgcgcacggggaattatc	354623	-	-	-	hypercholesterolemia (常染色体劣性の高コレステロール血症)
20468	ARGAP1	NM_014783.2	1402	tagtacagactcttatcgattat	343419	-	-	-	see also 5965 line
20469	ARGAP1	NM_018287.4	1104	caggcggtgtgtattactataac	369716	-	-	-	see also 7363 line
20470	ARGAP1	NM_018460.2	237	gggaaggtcactgaacactatct	371822	-	-	-	see also 7485 line
20471	ARGAP1	NM_033515.2	436	agccggtttatccaactcttc	404064	-	-	-	-
20472	ARGAP1	NM_032900.2	803	ctgtttcaacacgcttcattgat	402487	-	-	-	-
20473	ARGAP9	NM_032496.1	1086	ctgacgcgtctcttaccataat	400411	-	-	-	-
20474	ARGEF15	NM_173728.2	2033	caggagagagctgactgattagg	427964	-	-	-	-
20475	ARGEF16	NM_014448.2	1037	aagcgcggagagctgtcttagt	340659	-	-	-	-
20476	ARGEF17	NM_014786.2	1217	acgacgacctatgctctagg	343526	-	-	-	-
20477	ARGEF9	NM_015185.1	1659	acgaagcgagctgttagagaata	349460	-	-	-	-
20478	ARLTS1	NM_138450.3	404	gggaagaccacgcctctttaca	408240	-	-	-	-
20479	ARMC2	NM_032131.3	526	gtggacctgcgaagattagaag	397976	-	-	-	-
20480	ARMET	NM_006010.1	369	ggcgagctcggaagttgtattt	334573	-	-	-	-
20481	ARP10	NM_181773.2	187	acgcccacggagagctacttga	433116	-	-	-	-
20482	ARPC5L	NM_030978.1	499	gaggaactaggctccattataaga	395922	-	-	-	see also 8987 line
20483	ARV1	NM_022786.1	154	aagagttgtaccggagactataac	384224	-	-	-	-
20484	ASAH3	NM_133492.1	162	gcctcccgctacatttaccgttg	407249	-	-	-	-
20485	ASAM	NM_024769.1	491	atggctgcaccgataatgaag	390326	-	-	-	-
20486	ASB12	NM_130388.2	104	atgacaacgactctactatttg	406890	-	-	-	see also 9544 line
20487	ASB7	NM_024708.2	976	ttgcacgctgatgttagaatct	389463	-	-	-	-
20488	ASCL3	NM_020646.1	467	gagctgcatacaagtaactaac	377848	-	-	-	DNA binding
20489	ASF1B	NM_018154.1	597	gggtgacccgcttccatataaac	367777	-	-	-	-
20490	ASMTL	NM_004192.1	1094	tggcatcgatggcgaatactct	332465	-	-	-	-
20491	ASP	NM_031916.2	530	aagcggatgtggaattaacaga	397284	-	-	-	kinase related, signal transduction
20492	ASPM	NM_018136.2	3416	cagacggcggctgtgtattgtac	367296	-	-	-	see also 7271 line
20493	ASTN2	NM_014010.2	3323	aggcatggtgtgtagatgaatcc	339050	-	-	-	see also 5454 line
20494	ASXL2	NM_018263.2	4264	gagggcacgcttccgaatgtta	369508	-	-	-	see also 7348 line
20495	ATCAY	NM_033084.1	764	ccgggacacagcgggactattt	402761	-	-	-	-
20496	ATF7IP2	NM_024997.2	632	atgaggggctgtgtactaaag	392835	-	-	-	ataxia (運動失調)
20497	ATP9B	NM_198531.2	679	gaggtaaagtccaagttaagag	439247	-	-	-	-
20498	ATPAF1	NM_022745.1	852	gtgcatcgccaaccaagttcagc	363867	-	-	-	see also 10338 line

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20499	ATPAF2	NM_145691.2	583	gtgaggagcccgagacattagt	414894	-	-	-
20500	AUTL1	NM_032852.2	389	ctgcagatcggtgatataaata	402034	-	-	-
20501	AUTL2	NM_052936.2	272	gtgctgtctatgtttacatac	405416	-	-	-
20502	AUTL4	NM_032885.4	369	aagcgggacccagctttagaaga	402431	-	-	-
20503	AYP1	NM_032193.2	608	aagtgcgtggggccttaactgg	398642	-	-	-
20504	AZ2	NM_022461.1	650	aaggcctatcatcatatcgaga	382958	-	-	-
20505	B29	NM_031939.2	542	aagtcacatcagagagatgaag	397407	-	see also 9059 line	-
20506	B3GTL	NM_194318.1	625	ttgaatccgactttacaataga	436810	-	-	-
20507	B4GalNac-					-	-	-
20507	T3	NM_173593.2	2015	aggtacgcgaggtctttgaag	426399	-	-	-
20508	B7-H4	NM_024626.1	717	atgttacgatcaacaacacatac	388231	-	-	-
20509	BAALC	NM_024812.1	581	tggacagaagtcgaagaatcaca	390961	-	-	-
20510	BAIAP3	NM_003933.3	2602	gtggcgacatccgcgaagtatgt	332289	-	-	-
20511	BANP	NM_017869.2	1427	cagcagacatccaggttcaatag	363320	-	-	-
20512	BARHL2	NM_020063.1	680	aaggagaccgggagattacgagt	375570	-	-	-
20513	BASE	NM_173859.1	415	atgaagcccttcacagctaataat	428521	-	-	-
20514	BAT2	NM_004638.2	2274	gggtgctccctctagactttct	332675	-	see also 3150 line	-
20515	BBC3	NM_014417.2	782	ctggagggtcctgtacaactcca	340559	-	-	-
20516	BBP	NM_032027.2	554	cagcaccacacataactgttaag	397646	-	-	-
20517	BBS1	NM_024649.4	1296	cgaaagaccgcgtttacgtgg	388514	-	-	diabetes(糖尿病)
20518	BBS4	NM_033028.2	48	gggtcgcgcagcagactcaattt	402618	-	-	diabetes(糖尿病)
20519	BBS7	NM_018190.2	287	ggagatgatgggtgtgtatgt	368240	-	see also 7309 line	-
20520	BC02942	NM_033200.1	1525	ctgacgcgagatcgagttcatgt	403570	-	-	-
20521	BC008967	NM_033201.1	519	ggagagggatgagctaatacaga	403574	-	see also 9378 line	-
20522	BCAS1	NM_003657.1	273	aagtgtcaagacggataatgtgg	331914	-	see also 2477 line	-
20523	BCL11A	NM_018014.2	550	ggagatgacgattgtttatcaac	365306	-	see also 7199 line	-
20524	BCL11B	NM_022898.1	2201	cggcgtcgcggcacttcattgaag	384705	-	see also 8519 line	-
20525	BCL9L	NM_182557.1	1485	ggggccaccacaaattgtatgt	434424	-	-	-
20526	BCMP11	NM_176813.3	508	tcgggattacccttatgtatag	429708	-	-	-
20527	BCNP1	NM_173544.2	1386	ggcgtgcgcagggagggttact	425772	-	-	-
20528	BCOR	NM_017745.4	2837	cagtgcactccacgaacttata	361530	-	see also 7135 line	-
20529	BGALT15	NM_198540.1	1615	gtggctaccagcctatgaagc	439313	-	-	-
20530	BHD	NM_144606.3	777	cgggatatatcagccatgataaa	410247	-	see also 9715 line	-
20531	BHLHB5	NM_152414.2	965	aggcgtcgcgtcttaacataat	416440	-	-	-
20532	BIA2	NM_015431.2	1055	tgggttcagagccttctcatca	352752	-	-	-
20533	BICC1	NM_025044.2	1150	ggagtcagaacgccacacaaatc	393226	-	-	-
20534	BITE	NM_024491.1	894	tggatgctccaccaactataaa	386388	-	-	-
20535	BIVM	NM_017693.2	1021	tagtacatcgaaattatctaca	360923	-	see also 7114 line	-
20536	BLP1	NM_031940.2	55	aggtggttgcccggttact	397417	-	-	-
20537	BLP2	NM_025141.2	608	gggaatatggacgtgatagacg	393971	-	-	-
20538	BM039	NM_018455.3	927	gtgatgtccctgttagacatc	371783	-	-	-
20539	BNF1	NM_015424.3	1150	ctgccgtcaccgccgagaagtg	352623	-	-	-
20540	BNIP1	NM_138278.1	851	aaggctggggccgaggtgtatgt	407354	-	-	-
20541	BOMB	NM_024949.3	1201	cagataggactcagatacaatgc	392576	-	-	coreceptor

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20542	BP75	NM_012107.1	244	tgagaccctggaggtcttatgac	337494	-	-	-	-
20543	BR3BP	NM_080626.5	715	tggaggccgtctatcttcagacc	406511	-	-	-	-
20544	BRX	NM_018321.2	790	atgcataggcgtgataagatc	370321	-	-	see also 7404 line	-
20545	BRMS1L	NM_032352.2	717	ttgtgtttaggtccatata	399901	-	-	-	-
20546	BRN1	NM_015341.2	1419	aggcctcagcgcacaaagaatgc	351736	-	-	cell cycle	-
20547	BSND	NM_057176.2	759	agggaagagccctaaactcaga	406119	-	-	-	Bartter syndrome(パーター症候群)
20548	BTLA	NM_181780.1	152	gagatcccttgaaactagaatgc	433178	-	-	-	-
20549	BTN2A2	NM_006995.3	534	gggttaagccctcattgaaat	336710	-	-	-	-
20550	BTN2A3	NM_024018.1	434	ctgagccgtcattgaaa'gaga	385464	-	-	-	-
20551	BTN3A3	NM_006994.3	1751	ctgaactagtgctgcatcctcc	336704	-	-	-	-
20552	BTNL2	NM_019602.1	966	cagactgacccctgcagatactca	375443	-	-	-	-
20553	BVES	NM_007073.2	467	atgtaccggcgttggtgaacc	336905	-	-	-	-
BXMAS2-									
20554	10	NM_145016.2	446	aagagcatccctgaatccataaa	412648	-	-	-	-
20555	C10orf12	NM_015652.2	3209	aagtgtgaagcgtatgcatca	354920	-	-	-	-
20556	C10orf23	NM_152643.3	1487	gagaagcactcacggaagattca	419457	-	-	-	-
20557	C10orf24	NM_152709.2	2041	cagtaaccactcacatcaatt	419991	-	-	-	-
20558	C10orf25	NM_145022.1	248	acgaagtcaccttaattacacc	412802	-	-	-	-
20559	C10orf27	NM_152710.1	1292	aagagccacccctcagctcaatcc	419998	-	-	-	-
20560	C10orf28	NM_014472.2	2031	ctggagtgctatgtttaacgatg	340797	-	-	-	-
20561	C10orf29	NM_152586.2	2188	atgagtcacactcacactatct	418273	-	-	-	-
20562	C10orf3	NM_018131.3	323	gtggagatcgaagcctagtaact	367099	-	-	-	-
20563	C10orf30	NM_152751.1	345	cagcactggcggagctctatcagc	420577	-	-	-	-
20564	C10orf32	NM_144591.1	219	ttgcactcagaagatgtttaag	410090	-	-	-	-
20565	C10orf36	NM_194298.1	1398	atgcctatggagattaatgttc	436546	-	-	-	-
20566	C10orf39	NM_194303.1	230	caggcactgtaccggagaaatca	436675	-	-	-	-
20567	C10orf4	NM_145246.2	404	tagctatggatgcttataaaga	413836	-	-	-	-
20568	C10orf42	NM_138357.1	677	aggtagcaattgagattagcaga	407591	-	-	-	-
20569	C10orf45	NM_031453.2	760	atggccggagccagactacataga	397071	-	-	-	-
20570	C10orf46	NM_153810.2	1004	cagcactcggacacagatgtatag	423912	-	-	-	-
20571	C10orf5	NM_178816.2	151	aaggatattattatgtctttaga	431374	-	-	-	-
20572	C10orf6	NM_018121.2	2130	aaggccgattctaatgtatcttc	366895	-	-	see also 7265 line	-
20573	C10orf8	NM_012071.1	131	gggaagagggcgtgttagatca	337469	-	-	see also 5109 line	-
20574	C11orf10	NM_014206.1	188	aagtacactcgtgatatactataa	339970	-	-	-	-
20575	C11orf16	NM_020643.1	1379	aggagctggtctcgtgaaagcaacc	377840	-	-	-	-
20576	C11orf23	NM_018312.2	779	aggctctcagatgtatgcacc	370109	-	-	see also 7389 line	-
20577	C11orf24	NM_022338.1	611	cggcagcccccctcaactctatg	362596	-	-	-	-
20578	C11orf30	NM_020193.2	2263	ggagactagccctaccataattta	376006	-	-	see also 7794 line	-
20579	C11orf33	NM_017678.1	914	aggataatgacctattcagta	360577	-	-	see also 7108 line	-
20580	C11orf9	NM_013279.1	76	tggagccctccaaacatagacacc	338640	-	-	-	-
20581	C12orf10	NM_021640.1	613	gggtgtcgtcacttaactctacc	381009	-	-	-	-
20582	C12orf22	NM_030809.1	1087	ccgggtccggactcattacccctcc	395269	-	-	-	-
20583	C12orf4	NM_020374.2	385	gagtacatggcgcacaaagctatg	377101	-	-	see also 7854 line	-
20584	C13orf1	NM_020456.1	344	gtgttgcaactcagaagggttaac	377665	-	-	-	-

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20585	C13orf12	NM_015932.2	337	caggctcagctcttcattct	355504	-	-	-
20586	C13orf17	NM_018185.1	330	tggctatagcgtgggaagttcagg	368156	-	-	-
20587	C13orf18	NM_025113.1	1348	tggctcgtatagctgtaaatgaag	393701	-	-	-
20588	C13orf3	NM_145061.2	834	aagtgatgcgaatatacaact	413384	-	-	see also 9770 line
20589	C13orf7	NM_024546.2	746	cagtatgagcgtgaaaccaatcg	387033	-	-	see also 8637 line
20590	C13orf9	NM_016075.1	922	tggcagtgccgcctggtgaatt	356203	-	-	see also 6652 line
20591	C14orf100	NM_016475.2	529	aagcgtctacccactatatacc	357680	-	-	see also 6872 line
20592	C14orf101	NM_017799.2	966	agggaccgaactctcattcaaca	362626	-	-	-
20593	C14orf103	NM_018036.4	1174	ctgacgagagtgaggaaatgtatcc	365624	-	-	-
20594	C14orf104	NM_018139.1	706	atgggttaaacacagattcttgg	367584	-	-	-
20595	C14orf105	NM_018168.1	457	ttgacttgccacagagtaattact	367886	-	-	-
20596	C14orf108	NM_018229.2	1789	aagtgcaacccgggaaactaattt	368768	-	-	-
20597	C14orf11	NM_018453.2	389	aggtactacgatgatataattt	371775	-	-	-
20598	C14orf111	NM_015962.1	31	gcgaccatgaagcgaatgcttag	355638	-	-	-
20599	C14orf112	NM_016468.3	384	cagaaagccttaagactaagaca	357623	-	-	-
20600	C14orf115	NM_018228.1	2187	ctgcccgtccacatactacatg	368708	-	-	-
20601	C14orf116	NM_018589.2	304	tagatctgctactcttctgaat	372270	-	-	-
20602	C14orf118	NM_017926.2	990	gggtaccatactcgttgaatcg	364255	-	-	-
20603	C14orf119	NM_017924.2	192	aggtcccaagcgtgaaagtttcc	364054	-	-	see also 7178 line
20604	C14orf129	NM_016472.2	316	cggatgatgtggcctatacat	357638	-	-	-
20605	C14orf132	NM_020215.1	480	aagcatcatctgccttcattatt	376242	-	-	-
20606	C14orf133	NM_022067.2	1489	atgatgatagatccctattcacc	382007	-	-	see also 8260 line
20607	C14orf135	NM_022495.2	1274	ctggggatctcgattattatttc	383544	-	-	-
20608	C14orf138	NM_024558.1	329	aagaactgtcgaagatgaatatt	387261	-	-	-
20609	C14orf139	NM_024633.2	565	cagcagagagacagcaatcataa	388340	-	-	-
20610	C14orf140	NM_024643.1	755	tgggtgcagatccgagactaga	388472	-	-	-
20611	C14orf141	NM_032035.1	822	ctgccaaccttgagattattgtat	397673	-	-	-
20612	C14orf142	NM_032490.2	392	tggctgtgtactcttattgtca	400386	-	-	-
20613	C14orf147	NM_138288.1	218	atggcgatattgcactacttga	407450	-	-	see also 9592 line
20614	C14orf160	NM_024884.1	616	tgggggtctaatggctattgatt	391666	-	-	-
20615	C14orf161	NM_024764.1	1879	cggtagtgcctaggggattaatt	390276	-	-	see also 8741 line
20616	C14orf162	NM_020181.1	346	tagacagtcactcgcagataatg	375834	-	-	-
20617	C14orf166	NM_016039.1	272	caggcactacaaagattgaagaca	356075	-	-	-
20618	C14orf168	NM_031427.1	181	tgtctaattgagagactttca	396939	-	-	-
20619	C14orf169	NM_024644.1	1918	ttggcaaccagcttgatgataa	388499	-	-	see also 8676 line
20620	C14orf24	NM_173607.2	445	gggtatagcagcccaagtcacc	426487	-	-	-
20621	C14orf29	NM_181533.3	634	gtgggtgcaagtatcataattc	432396	-	-	-
20622	C14orf32	NM_144578.2	230	aggtcccaaccttggaaatc	409911	-	-	-
20623	C14orf34	NM_017949.1	1499	gagagatcgttgaaatcacgaat	364661	-	-	-
20624	C14orf39	NM_174978.1	1711	cagacacttaactcatacattt	428884	-	-	see also 10136 line
20625	C14orf45	NM_025057.1	93	ctgcagcaacacgaatgataa	393345	-	-	-
20626	C14orf48	NM_152777.2	761	gggtctcatagctcaagatcc	421069	-	-	-
20627	C14orf49	NM_152592.2	2382	tcgtgcagcggcaaatctctac	418518	-	-	-
20628	C14orf50	NM_172365.1	886	ggggactcttctgaccaat	424427	-	-	-

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20629	C14orf54	NM_173526.1	686	gagtggtgagcctactactac	425485	-	-	-
20630	C14orf58	NM_017791.1	1490	tgggtgtacacgtttaccttg	362435	-	see also 7154 line	-
20631	C14orf59	NM_174976.1	389	ggcgaattacgtcttgcctcc	428825	-	-	-
20632	C14orf8	NM_173846.3	557	gggttctggcacctcagataaga	428480	-	-	-
20633	C14orf9	NM_144568.1	377	cagtggaagtgccctatgaca	409750	-	-	-
20634	C14orf93	NM_021944.1	1314	aggcgaagcggatcttgaact	381516	-	see also 8207 line	-
20635	C14orf94	NM_017815.1	1023	gtgcggctgctatgctcctaagc	362681	-	-	-
20636	C15orf16	NM_130901.1	1038	aagaaggccatcgttgttgg	407142	-	-	-
20637	C15orf5	NM_030944.1	448	aggacactagaggcaagacatta	395651	-	-	-
20638	C16orf34	NM_144570.1	240	gtggtatctttgacgaatcaacc	409767	-	-	-
20639	C17orf28	NM_030630.1	1238	ggcagcgacgtctcagacatcc	394726	-	-	-
20640	C17orf31	NM_017575.3	817	ctggcctgacggataatggatgt	359243	-	-	-
20641	C19orf10	NM_019107.1	218	gggcaaaatatacgtgtatgttc	375235	-	-	-
20642	C19orf6	NM_033420.2	1271	gtggctcggcggaccagatgacg	403876	-	-	-
20643	C1orf14	NM_030933.1	1223	acgtgtcagctcatttgatgtc	395556	-	-	-
20644	C1orf16	NM_014837.2	190	atgctagtaccggatttgggaata	344382	-	-	-
20645	C1orf19	NM_052965.1	170	gggcactcaaccctaagtatatag	405566	-	-	-
20646	C1orf21	NM_030806.2	700	ggagttcgggattagttcatca	395221	-	see also 8952 line	-
20647	C1orf26	NM_017673.4	2845	aagacatctcaactataggata	360569	-	see also 7104 line	-
20648	C1orf27	NM_017847.2	891	atgtagaggttctgtaaacctta	363050	-	see also 7161 line	-
20649	C1orf28	NM_024529.3	474	ggctcaacatcggcaagataga	386724	-	see also 8627 line	-
20650	C1orf29	NM_006820.1	807	aagccgtagtggggctctgtatcc	336388	-	-	-
20651	C1orf35	NM_024319.2	340	tggctacaagaacgtgaagaagc	386251	-	-	-
20652	C1orf36	NM_183059.1	1423	aagatccaccatctctatgtgg	435578	-	-	-
20653	C1orf37	NM_138391.3	670	ggctgtcgacaccagatgaatgg	407937	-	see also 9609 line	-
20654	C1orf9	NM_014283.2	3307	atgcagcgttgtgaataacttc	340107	-	see also 5590 line	-
20655	C1QDC1	NM_023925.2	2725	aggtagcccccgtagcatctaaag	385361	-	-	-
20656	C1QTNF1	NM_030988.2	600	ccgccgtgccccccagatcaacatc	395895	-	-	-
20657	C1QTNF2	NM_031908.3	687	ggcgtgctggggtatctactact	397250	-	-	-
20658	C1QTNF5	NM_015645.1	607	agccgtcacccggcgaagtccacc	354858	-	-	-
20659	C1QTNF6	NM_031910.3	690	acgtacgtgcacattatgcataa	397260	-	-	-
20660	C1QTNF7	NM_031911.3	866	atggcaataccgggataaagacc	397270	-	see also 9051 line	-
20661	C20orf108	NM_080821.1	554	gtgcccttgatgtcagatattt	406785	-	-	-
20662	C20orf110	NM_021202.1	974	gtgcagcggccagttcaactact	380753	-	see also 8137 line	-
20663	C20orf112	NM_080616.1	912	ggcgatgctgtagagatctacc	406449	-	-	-
20664	C20orf116	NM_023935.1	788	gggactataaacaggtgtgtatga	385438	-	-	-
20665	C20orf12	NM_018152.2	1920	aagacaatcgaccgctcataacc	367767	-	-	-
20666	C20orf126	NM_030815.2	292	tggtttcttggggaacatgttt	395289	-	-	-
20667	C20orf128	NM_178468.1	1280	ctgcctcaacataatagtacc	430822	-	-	-
20668	C20orf129	NM_030919.1	788	atgacagctggactatcacagg	395444	-	-	-
20669	C20orf132	NM_152503.1	1325	ctgcgcgtaaatgtcttacaac	417267	-	-	-
20670	C20orf133	NM_080676.2	164	gagagacgcaagaatacctaag	406666	-	-	-
20671	C20orf140	NM_144628.1	795	aggcaacgtgctgggttatga	410537	-	see also 9720 line	-
20672	C20orf141	NM_080739.1	339	ggggcactagggactgacaatcc	406680	-	-	-



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20673	C20orf152	NM_080834.1	567	tggctgcaggcgtgtgatcatca	406830	-	-	-
20674	C20orf158	NM_152302.1	1407	gagaatatactcttaacgatgg	415434	-	-	-
20675	C20orf160	NM_080625.2	120	ctgcactcagatgccctttatcc	406500	-	-	-
20676	C20orf172	NM_024918.2	634	cagagctcagccggtctatcagt	392139	-	-	-
20677	C20orf173	NM_080828.1	573	tggcaacgacatcgaccatcacc	406799	-	-	-
20678	C20orf75	NM_080829.1	1255	cagtgaacccgtttgatctga	406809	-	-	-
20679	C20orf185	NM_182658.1	1259	acggatcgcgtttagaagaatgg	434867	-	-	-
20680	C20orf186	NM_182519.1	181	gggggcaaatatccatatagttga	434074	-	-	-
20681	C20orf19	NM_018474.2	1549	tggcagtaggtcagctattcac	371993	-	-	-
20682	C20orf20	NM_018270.3	306	ctgcatagtctgagattcttc	369603	-	-	-
20683	C20orf21	NM_017798.2	528	aggggacccctcggattccatcc	362590	-	see also 7155 line	-
20684	C20orf24	NM_018840.1	419	agggactctgtactacttactca	372965	-	-	-
20685	C20orf28	NM_015417.2	275	atgttgagagatgcacattatgt	352362	-	-	-
20686	C20orf29	NM_018347.1	394	agggcaggtagagtgcaatgtctcg	370561	-	-	-
20687	C20orf32	NM_020356.1	2221	gagaggaaccccgcttatctga	376891	-	signal transduction	-
20688	C20orf38	NM_018327.1	236	aggaagcacccttcattgtatg	370413	-	-	-
20689	C20orf4	NM_015511.2	519	agggccctcgtatgggtttcttc	353648	-	-	-
20690	C20orf40	NM_144703.1	679	ctgtgcacaacctgaatgctaaa	411496	-	see also 9731 line	-
20691	C20orf43	NM_016407.1	73	gggttgagacgggggaacaatcc	357394	-	-	-
20692	C20orf44	NM_018244.2	684	aagtacatgttgtatcatatgt	368982	-	-	-
20693	C20orf45	NM_016045.1	548	agggcggagaaacaatggatgg	356096	-	-	-
20694	C20orf55	NM_031424.3	835	acggggcagctcggatcgtgtgt	396926	-	-	-
20695	C20orf6	NM_016649.3	1149	acgtcgtatgacagctgtttgaaca	358727	-	-	-
20696	C20orf65	NM_176791.2	454	cagagaaaccttgaaagtcagt	429611	-	-	-
20697	C20orf67	NM_022104.2	753	gggtacgctccctgaagataaac	382308	-	-	-
20698	C20orf7	NM_024120.2	251	tcggatcgcagaccgtgtatgt	386112	-	see also 8603 line	-
20699	C20orf71	NM_178466.1	561	gagacgctcttcgataaaca	430809	-	-	-
20700	C20orf72	NM_052865.2	319	tggacccgtgagcaagcataagc	404516	-	-	-
20701	C20orf81	NM_022760.3	1710	cggggagatgccacgctatgtcc	383991	-	see also 8455 line	-
20702	C20orf86	NM_080674.1	631	agggcgtttgtgcgtgtatgt	406662	-	-	-
20703	C20orf9	NM_016004.1	1319	atgacatcgatcacagtgaaaca	355815	-	see also 6603 line	-
20704	C20orf92	NM_053041.1	449	caggtccaggcgggtttcataac	405822	-	-	-
20705	C21orf100	NM_145033.1	91	tgggtctcccaagaagtcatat	412983	-	-	-
20706	C21orf121	NM_198078.1	339	ctgtgtcccaaacagttgtgc	436985	-	-	-
20707	C21orf125	NM_194309.1	369	acggctttgacaaagaatcgattt	436684	-	-	-
20708	C21orf128	NM_152507.1	249	gagacacgctgcattctcagc	417313	-	-	-
20709	C21orf129	NM_152506.1	544	gggacccagggctgtgtgttg	417310	-	-	-
20710	C21orf18	NM_017438.1	885	ctgttacggccctcagataatc	358842	-	-	-
20711	C21orf42	NM_058184.1	474	tggaaactttaccaaggattaag	406209	-	-	-
20712	C21orf56	NM_032261.3	364	gaggagctactactcatcaga	399103	-	molecular_function unknown	-
20713	C21orf69	NM_058189.1	432	gtggttctaggcatgaagacc	406216	-	-	-
20714	C21orf7	NM_020152.2	596	ctgaagccaaagtattactgt	375727	-	-	-
20715	C21orf70	NM_058190.1	155	aggactggcgcgttcatacacc	406217	-	-	-

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20716	C21orf77	NM_018277.1	221	acgacctctgcaggaaacctatct	369638	-	-	-	-
20717	C21orf80	NM_015227.2	1106	cggaggcgttgcgattatgacc	350122	-	-	-	-
20718	C21orf84	NM_153752.1	270	aagcccgatgggaagaatgtct	423881	-	-	-	-
20719	C21orf86	NM_153454.1	685	cgcagagagcggatgtttgtga	423283	-	-	-	-
20720	C21orf88	NM_153754.1	365	gtgtgggtgttaggaatgaagt	423887	-	-	-	-
20721	C21orf90	NM_153204.1	749	cagctcattcgttagatgatgg	422098	-	-	-	-
20722	C22orf18	NM_024053.2	390	aagctggccacacctatcaaaag	385653	-	-	-	-
20723	C22orf19	NM_003678.2	1337	ctgactttgagcgactatgtact	331990	-	-	-	-
20724	C22orf4	NM_014346.1	1082	gtgatacgttcaggggtataaat	340253	-	-	-	-
20725	C2orf11	NM_144629.1	700	gtgtgctattgcgcttgaatt	410555	-	-	-	-
20726	C2orf3	NM_003203.2	2097	ctgctaaatcgttaccttattat	331294	-	-	transcription, regulat	RNA polymerase II
20727	C2orf5	NM_152516.1	109	ctgctacgagccagctatatcc	417450	-	-	or	transcription factor
20728	C2orf6	NM_018221.1	246	aggatcctatcagtagtaactct	368566	-	-	-	-
20729	C2orf9	NM_032309.2	282	gcgggactgtcactacccttaaga	399642	-	-	-	-
20730	C3F	NM_005768.4	175	ctagcttgatactattacactgc	334224	-	-	-	-
20731	C3orf6	NM_174908.2	1003	gtgcttatgcagatagttactat	428608	-	-	-	-
20732	C4.4A	NM_014400.1	452	gcctctgaccccgccaggttaatga	340532	-	-	-	-
20733	C4orf7	NM_152997.1	143	gtgacagcagatgaattagcttca	421760	-	-	-	-
20734	C4orf8	NM_003704.1	2959	aagcggcagcagggcacaagaag	332032	-	-	-	-
20735	C5orf7	NM_016604.2	4321	atgtctgatagcccatcactctt	358326	-	-	see also 6947 line	-
20736	C6orf10	NM_006781.2	504	ctgtctgacatcaagtattgtag	336330	-	-	-	-
20737	C6orf102	NM_145027.2	222	cagcgttaccatcgatgacaaca	412860	-	-	-	-
20738	C6orf105	NM_032744.1	119	ctggtatacttctccaattatt	401308	-	-	-	-
20739	C6orf107	NM_017754.2	1313	ccgaagatggcgtttgactatt	361724	-	-	-	-
20740	C6orf109	NM_015388.1	248	aggctctagcttcgaggatagg	352176	-	-	-	-
20741	C6orf111	NM_032870.1	2034	ggagagagtcgaagtatagataa	402372	-	-	-	-
20742	C6orf113	NM_145062.1	1712	aaggtaacagtcgaactgttatt	413456	-	-	see also 9771 line	-
20743	C6orf117	NM_138409.1	191	atgtcgcgccagaggttaatttc	407968	-	-	-	-
20744	C6orf118	NM_144980.1	234	cagcctcggagacgactttaca	412270	-	-	-	-
20745	C6orf125	NM_032340.1	220	tagcgcactccattcaaaactac	399819	-	-	-	-
20746	C6orf128	NM_145316.2	111	tggcgcgtagacatgtatctcctc	414412	-	-	-	-
20747	C6orf130	NM_145063.2	393	atggcgcatatattactttg	413466	-	-	-	-
20748	C6orf134	NM_024909.1	409	tggccatggcggagaactctcc	391966	-	-	see also 8803 line	-
20749	C6orf136	NM_145029.1	1157	ttgtcgcctcgtctagataaac	412887	-	-	-	-
20750	C6orf141	NM_153344.1	824	gggaacttggctcagggaaattaa	422844	-	-	-	-
20751	C6orf142	NM_138569.1	161	aagactacacccatactactcagt	408450	-	-	-	-
20752	C6orf146	NM_173563.1	1110	gtgctctagacttgcacaaatta	426153	-	-	-	-
20753	C6orf148	NM_030568.2	686	gggagccagggactcctatcatca	394629	-	-	-	-
20754	C6orf150	NM_138441.1	720	ctgaacacccgggagcgtactatga	408194	-	-	-	-
20755	C6orf151	NM_152551.2	776	agggtattcagatgtgataaat	418022	-	-	-	-
20756	C6orf152	NM_181714.1	1438	aaggaggtacagcactatataca	432933	-	-	-	-
20757	C6orf153	NM_033112.1	195	gtggggactaagacgtacaaca	403353	-	-	-	-
20758	C6orf155	NM_024892.1	566	ggcgtcatcgcggtgactttct	391646	-	-	-	-

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20759	C6orf162	NM_020425.3	114	gggggtgcgcacaaacccatt	377415	-	-	-
20760	C6orf165	NM_178823.2	277	ttgtatgaactggctattgata	431670	-	-	-
20761	C6orf166	NM_018064.2	1074	aagtttaccgcatgacaataat	366036	-	-	-
20762	C6orf167	NM_198468.1	416	cggagcccttaagcgattgattt	438281	-	-	-
20763	C6orf168	NM_032511.1	1201	aagaccgcgaacggctgacaaag	400500	-	-	see also 9229 line
20764	C6orf170	NM_152730.2	626	gtgtgtgtcacatatagtagac	420193	-	-	-
20765	C6orf18	NM_019052.2	1157	gtgacctgtgtgagaatctaag	374772	-	-	-
20766	C6orf182	NM_173830.3	1418	aagacagctaccctaaaggatca	428444	-	-	-
20767	C6orf188	NM_153711.1	681	ctgcgagctaaagtttagctacc	423837	-	-	see also 10016 line
20768	C6orf192	NM_052831.1	210	toggcagcttoggtagaacttagg	404270	-	-	-
20769	C6orf195	NM_152554.1	879	cagaggagattagcaatgaagc	418072	-	-	-
20770	C6orf203	NM_016487.2	213	aagttacgtgcaccaaattataa	357818	-	-	-
20771	C6orf206	NM_152732.2	132	aagcgcgactaccgctatgatcg	420245	-	-	-
20772	C6orf210	NM_020381.2	755	ttgtacatctgtggagatgaat	377326	-	-	-
20773	C6orf211	NM_024573.1	1298	caggttgacactgacttatatgc	387406	-	-	-
20774	C6orf25	NM_025260.2	368	tggggagacaggacctattgcaag	394621	-	-	-
20775	C6orf27	NM_025258.1	1361	gagctcggcgagatctgtgtcc	394615	-	-	-
20776	C6orf29	NM_025257.1	609	ggggatcagcggctatttgaca	394585	-	-	-
20777	C6orf32	NM_015864.2	839	aagtaaggtagatgaactctatg	355269	-	-	see also 6546 line
20778	C6orf37	NM_017633.1	1168	agggggagggcctgtctaagtact	359787	-	-	molecular_function unknown
20779	C6orf55	NM_016485.3	710	cagggtgatacaagtaatactatc	357798	-	-	see also 6879 line
20780	C6orf56	NM_014721.1	1767	ctcgagtttaacagagtagtaga	342868	-	-	-
20781	C6orf60	NM_024581.3	2851	ttgttacggcataatcatcatca	387522	-	-	-
20782	C6orf62	NM_030939.2	809	cagctocatgctctctcgatatca	395634	-	-	see also 8972 line
20783	C6orf64	NM_018322.1	447	ggcgcctactctgtgtcaatc	370330	-	-	-
20784	C6orf65	NM_152731.1	535	cagccgacttcgacagctcttgg	420235	-	-	-
20785	C6orf69	NM_173502.3	894	aaggcatcagtgcaactgtattt	426107	-	-	channel
20786	C6orf74	NM_016063.1	340	gagtcagagaccacatctagtc	356173	-	-	-
20787	C6orf75	NM_021820.1	122	ggattccgcctgcgcggaaataa	381041	-	-	-
20788	C6orf76	NM_024807.1	1073	atgtgcagcgatcctctcacag	390835	-	-	-
20789	C6orf78	NM_153036.1	429	cggagatgaagcgcacaaacaca	422016	-	-	-
20790	C6orf81	NM_145028.3	413	ctgaggccctctgtgttactacg	412873	-	-	-
20791	C6orf82	NM_015921.1	619	aagtggccgaggaattgcatgtg	355492	-	-	see also 6571 line
20792	C6orf83	NM_145169.1	470	ggagtcaggtattaaatgctgt	413549	-	-	-
20793	C6orf84	NM_014895.1	1901	aggggtggcgcaagccctaattga	345330	-	-	-
20794	C6orf89	NM_152734.1	1015	gagcgggtgttcccttcctta	420264	-	-	-
20795	C6orf93	NM_032860.3	1221	aagcccaacaaatcgaaatc	402156	-	-	see also 9322 line
20796	C6orf96	NM_017909.1	192	aagaaatcggtatctaatgttaa	363843	-	-	see also 7171 line
20797	C6orf97	NM_025059.2	123	cggctacgcggagagcagtaaac	393362	-	-	-
20798	C7orf1	NM_138701.1	511	cagtatctgtaggataaagc	408606	-	-	-
20799	C7orf3	NM_032625.1	797	gggtgtgtggcctggatacttgg	401147	-	-	-
20800	C7orf9	NM_032831.1	156	cggccataaggcgcatgattacc	401806	-	-	-
20801	C7orf2	NM_022458.2	206	gtcggagggtccacagatatgtt	382906	-	-	-

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20802	C7orf20	NM_015949.2	451	ctgagcgcgtgacacctgtgtcc	355597	-	-	-
20803	C7orf22	NM_031443.2	113	ctggaattgtctgccatttaaa	397026	-	-	-
20804	C7orf23	NM_024315.2	453	tggatcgacaaggagacttaga	386241	-	-	-
20805	C7orf24	NM_024051.2	433	tggaaatgtatgtgttaataaag	385630	-	-	-
20806	C7orf25	NM_024054.1	1148	ctgttaataaagagaattaat	385675	-	-	-
20807	C7orf26	NM_024067.2	476	tgtgcccggatccattcagag	385718	-	see also 8581 line	-
20808	C7orf27	NM_152743.1	482	gtcggctgacaccatctctcc	420309	-	-	-
20809	C7orf28B	NM_198097.1	510	aggcgtcaagctctgaaagaaa	437026	-	-	-
20810	C7orf31	NM_138811.3	1557	aggagaagaattcccgataattc	409167	-	see also 9641 line	-
20811	C7orf33	NM_145304.2	517	ggcggctgacaggtcaattaaat	414270	-	-	-
20812	C7orf34	NM_178829.2	442	ggggaggacattcccaaatatcc	431978	-	-	-
20813	C7orf35	NM_032936.2	397	atggctggggcgggttaagtctgg	402559	-	see also 9346 line	-
20814	C8orf14	NM_054029.1	1564	ggaccggagatcgggtcaacttg	406010	-	-	-
20815	C8orf15	NM_175076.1	1087	tagagattgctgggattgtag	429006	-	-	-
20816	C8orf17	NM_020237.1	1252	ccgtcataagtaacaagatgtgg	376406	-	-	-
20817	C9orf10	NM_014612.2	1428	ggcggaggggcgacaaaccatatac	341108	-	-	-
20818	C9orf23	NM_148178.1	227	cagtcctcggcatgtagtctct	415121	-	-	-
20819	C9orf24	NM_032596.3	952	atgcagtgctgtttacaactcc	400990	-	-	-
20820	C9orf25	NM_147202.1	689	aaggacggcctaccgggttagatga	415118	-	-	-
20821	C9orf26	NM_033439.1	536	aggtgacgggtgtgtgtgtaaga	404018	-	-	-
20822	C9orf34	NM_017948.3	1903	aaggcgaatggcccaactatata	364611	-	-	-
20823	C9orf37	NM_032937.2	837	caggatgcccttttgagaaatgc	402570	-	-	-
20824	C9orf41	NM_152420.1	690	ctgttaaccagcaacattaaag	416517	-	-	-
20825	C9orf45	NM_030814.3	644	atgttactggggagcccaaatgt	395283	-	-	-
20826	C9orf46	NM_018465.1	447	tgttcccagttgtccattgaagc	371892	-	see also 7490 line	-
20827	C9orf48	NM_194313.1	1323	caggtagatttcataatagaca	436711	-	-	-
20828	C9orf54	NM_032809.2	544	ctgagtggtcatcttccattga	401598	-	-	-
20829	C9orf7	NM_017586.1	237	cgggcgtgtggatgatcatgaat	359387	-	-	-
20830	CAB2	NM_033419.2	205	gggaagactgtaaagtatgaggt	403862	-	-	-
20831	CACNB3	NM_000725.2	874	aagcgtatgtgtctcaacaatcc	329864	-	channel	voltage-gated calcium channel
20832	CaMKIINaI					-	kinase related	-
20833	CAMTA2	NM_018584.4	556	gggcaagcgggtgttattgaag	372264	-	-	-
20834	CANP	NM_015099.2	2660	cogtcacgcagccattcttagt	348025	-	see also 6236 line	-
20835	CAP350	NM_198947.1	1301	tggtagcggatgtctatctaat	440177	-	-	-
20836	CAPN12	NM_014810.2	7102	aagacctagttggattagctatt	344091	-	-	-
20837	CASKIN1	NM_144691.2	554	gtgctgagccgaagttcatctgt	411329	-	-	Alzheimer disease(アルツハイマー病)
20838	CASKIN2	NM_020753.1	1179	gtgaacatccggaatcagtataa	378602	-	-	-
20839	CASPAP	NM_02115.2	3534	atggcatagttgattgtttatt	373612	-	-	-
20840	CASP	NM_015576.1	3062	ggagagtgccaacattccaatca	354236	-	see also 6496 line	-
20841	CBLL1	NM_024814.1	1475	aagatatagaccgtattaccaat	391041	-	see also 8757 line	-
20842	CBLN2	NM_182511.2	913	tccgaccaggtattgataatatt	434039	-	-	-
20843	CBLN1L1	NM_080617.3	491	gtgtcctctctacacatagataa	406457	-	see also 9516 line	-

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20844	CNDBP1	NM_012142.2	1061	ctgaccgtggaatcaattctgc	337706	-	-	-	-	-
20845	CD1E	NM_030893.1	183	gggcaaccatcgctttctgaagc	395356	-	-	-	-	-
20846	CDA017	NM_032024.2	741	ggggaagtgctgctacgtttact	397621	-	-	-	-	-
20847	CDAN1	NM_032026.1	28	gagtcgttcaagttatcgata	397624	-	-	-	-	-
20848	CDAN1	NM_138477.1	1424	ctgacaatcggtccaactctcc	408371	-	-	-	-	-
20849	CDCA4	NM_017955.2	641	aagtcacttgatcagatttga	364861	-	-	-	-	-
20850	CDCA5	NM_080668.2	235	cagaagcccatcgctttaaaga	406615	-	-	-	-	-
20851	CDCA7	NM_031942.3	852	ggagccgcgaaggcggtacattcc	397446	-	-	-	-	-
20852	CDCA8	NM_018101.1	600	aggtcaagccgtgctaactgt	366712	-	-	-	-	-
20853	CDCP1	NM_022842.3	968	aggaagcgggtgaatactacatc	384653	-	-	-	-	-
20854	CDK5RAP	NM_016082.3	325	ggagtagcctgggtccatttaca	356220	-	-	-	-	-
20855	CDK5RAP	NM_018249.3	625	aggtggaagatctctaaactaa	368985	-	-	-	-	-
20856	CDT1	NM_030928.2	1502	tgggcagctgtgtactatcatg	395533	-	-	-	-	-
20857	CDV-1	NM_014055.2	1538	taggcaacaggcaatctatcatt	339432	-	-	-	-	-
20858	CEAL1	NM_020219.1	275	acggaggcacagggtatttacc	376244	-	-	-	-	-
20859	CECR5	NM_017829.4	1034	gtgtatcacaggcttacaatcc	362837	-	-	-	-	-
20860	CECR6	NM_031890.1	1815	gggtgctcaggtgctatgcaaca	397229	-	-	-	-	-
20861	CEI	NM_178569.2	512	caggctccggccaaagaatttag	431336	-	-	-	-	-
20862	CG018	NM_052818.1	633	cgtatgaacacgagtacttt	404261	-	-	-	-	-
20863	CGEF2	NM_007023.1	1490	agggcaatacacagtgcagcttaa	336821	-	-	-	-	-
20864	CGI-115	NM_016082.2	743	tggaagatcctacgtatgattt	356113	-	-	-	-	-
20865	CGI-12	NM_015942.3	289	cagttactagctcaagtagtca	355534	-	-	-	-	-
20866	CGI-125	NM_016060.1	347	atgctcagtggtgcgaatttatt	356143	-	-	-	-	-
20867	CGI-127	NM_016061.1	173	ttgtcaaaactgtgatacgtcc	356152	-	-	-	-	-
20868	CGI-128	NM_016062.1	381	aagatggacgtgcacattactcc	356170	-	-	-	-	-
20869	CGI-32	NM_015960.1	239	ctgactcggattgaattgttct	355632	-	-	-	-	-
20870	CGI-41	NM_015997.2	714	tggaatgcctacatcctcgaatt	355705	-	-	-	-	-
20871	CGI-48	NM_016001.1	1470	ctgaacttcaactctactacaga	355737	-	-	-	-	-
20872	CGI-49	NM_016002.1	768	ggggactcaactgttactttatg	355759	-	-	-	-	-
20873	CGI-57	NM_015680.3	876	gtggcatcgtggccgtaataca	354987	-	-	-	-	-
20874	CGI-62	NM_016010.1	668	caggtaaagtgtcttcaagtagc	355869	-	-	-	-	-
20875	CGI-83	NM_016027.1	436	ggagccactctaagagttcttat	355968	-	-	-	-	-
20876	CGI-85	NM_016028.3	351	aggtcgaacagatgaatggttaa	355987	-	-	-	-	-
20877	CGI-90	NM_016033.1	499	gtgtatgaagccctagatgtagc	356042	-	-	-	-	-
20878	CGI-94	NM_016037.1	360	ggaaactcagggcgtcaaatata	356060	-	-	-	-	-
20879	CHPF	NM_024536.4	2200	cagcgaggcctgcttctacaact	386910	-	-	-	-	-
20880	CHPPR	NM_014637.2	722	tgggcctccaccacaagtacatct	341579	-	-	-	-	-
20881	CHRM4	NM_000741.1	23	atggcagctcgggcaatcagttcc	329871	-	-	-	-	-
								gpcr, receptor activity	muscarinic acetylcholine receptor	-

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[illegible]

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20920	COL26A1	NM_133457.1	264	ctgcgccacccctgaagttaca	407230	-	-	-	-
20921	COL8A2	NM_005202.1	1771	ggcgatgccggtgaattggacc	333589	-	-	-	Alzheimer disease(アルツハイマー病)
20922	GOP1	NM_022457.4	1186	ttgtccaaagtttaactcgataaa	382882	-	see also 8376 line	-	-
20923	COPS3	NM_003653.2	732	tggcggtcagtcatacatcatttg	331897	-	see also 2472 line	-	-
20924	COPS4	NM_016129.2	410	aagatocagcctagagtcatttc	356378	-	see also 6680 line	-	-
20925	COPS7A	NM_016319.1	935	ggagagagccccaagattggtcc	356951	-	-	-	-
20926	COPS7B	NM_022730.1	470	cggaatctccgggaactagaaga	383742	-	see also 8434 line	-	-
20927	CORTBP2	NM_033427.1	3785	tggactgtcgaatgtatttact	403965	-	-	-	-
20928	COX7B2	NM_130902.1	277	gtgtgtctacatgggtgttaca	407157	-	-	-	-
20929	CPEB2	NM_182485.1	1421	ggagtggttctctagggcattaaag	433869	-	see also 10259 line	-	-
20930	CPLX4	NM_181654.1	225	aggcgatgcctcagagttcatct	432797	-	-	-	-
20931	CPNE2	NM_152727.4	642	ctgcggggaaggcctgattacg	420108	-	see also 9933 line	-	-
20932	CPNE4	NM_130808.1	697	gtgcagcgcctgcaggttgaagt	406939	-	-	-	-
20933	CPNE5	NM_020939.1	892	ccctggggcagagcccaattcaaca	380207	-	-	-	-
20934	CPNE8	NM_153634.2	1204	aggatatctcacgaattgcttt	423440	-	see also 10002 line	-	-
20935	OPR8	NM_004748.2	2435	tggacccaggtcgggttacataa	332906	-	-	-	-
20936	CPXCR1	NM_033048.3	907	atgtagattccgtgctattgtga	402692	-	-	-	-
20937	GRA	NM_006697.1	545	cagggtccctgcataaattatc	336046	-	-	-	-
20938	CREB3L2	NM_194071.1	1371	aggttctagagaaacactaatagg	436051	-	-	-	-
20939	GREG2	NM_153836.1	877	aggaaagtgcctcgtcaatatga	423948	-	-	-	-
20940	CRG-L2	NM_181789.1	1002	gtggacggctcgagcattctgt	433493	-	-	-	-
20941	CRIP1	NM_014171.2	134	aagatgggtctagggaataccaca	339831	-	-	-	-
20942	CROC4	NM_006365.1	479	aagatctatatgctctatgcacc	335351	-	-	-	-
20943	GRR9	NM_030782.2	622	ccgatgtgcatcggtacatgaag	394970	-	see also 8945 line	-	-
20944	CRAM	NM_019604.1	737	cagtaacgggaagattctagtaca	375468	-	-	-	-
20945	ORYGN	NM_144727.1	294	cgcgactaccgccgaactcttc	411862	-	-	-	-
20946	GSE-C	NM_018978.1	1700	ctggcgatcgattcttgcctagg	373986	-	-	-	-
20947	CSMD2	NM_052896.2	6973	gtgacatcgtacgcctacagatgc	404702	-	-	-	-
20948	CSMD3	NM_052900.2	6521	ctgatccagcccggttcgaat	405007	-	-	-	-
20949	CSTL1	NM_138283.1	411	cagcaacgacacactactatct	407372	-	-	cysteine protease inhibitor	-
20950	CTAG3	NM_175745.2	473	atggcacactagacaaattgta	429218	-	-	-	-
20951	CTAGE-2	NM_172241.1	115	ggagaccgattctctctctatg	424366	-	-	-	-
20952	CTCFL	NM_080618.2	1402	aagcgacctacgtggtcatatgc	406488	-	-	cell cycle, transcription_regulat or	-
20953	CTHRC1	NM_138455.2	238	gtgggtgacctgtataatggaat	408270	-	-	-	-
20954	CTL2	NM_020428.2	1624	gtgcagatcatcctgtgtact	377456	-	-	kinase related	-
20955	GTXL	NM_014312.3	402	ctgacgtcacccctcagatact	340145	-	-	-	-
20956	OXorf15	NM_018360.1	689	ggagaacttcagcgtcacataaag	370749	-	-	-	-
20957	CYFIP1	NM_014608.1	2227	acggttaacatcagaatgaaga	341088	-	see also 5772 line	-	-
20958	CYFIP2	NM_014376.1	2197	ctggattctaacggaccatctcc	340448	-	see also 5638 line	-	-
20959	CYLN2	NM_003388.3	2007	tggggtgctcgggataataacg	331652	-	-	-	-
20960	CYorf15B	NM_032576.1	608	aagctgtacaggctcttcaaat	400826	-	-	-	-

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20961	CYP26C1	NM_183374.1	789	gggtgatgcctcgcactaatca	435688	-	-	-
20962	D2LIC	NM_015522.2	219	tgggggaaagactactatttc	353682	-	-	-
20963	D6S2654E	NM_012135.1	253	gaggttcggcgactacgacg	337691	-	-	-
20964	DAB2IP	NM_032552.1	1894	ctgcccgcagctcgagtactcg	400676	-	-	-
20965	DARP	NM_144994.5	777	gtcgggcacgcgcagctacaagc	412505	-	-	-
20966	DATF1	NM_022105.2	2017	gtggcgagcgatocaaattaca	382358	-	apoptosis, transcription_regulat	-
20967	DBC-1	NM_021174.4	1628	gcgcttgcgcgagttcagttacc	380571	-	or	-
20968	DBC1	NM_014618.1	2508	tggatattcgggacccgaattaat	341363	-	-	-
20969	DBCCR1L	NM_199051.1	2508	atgacacgaccaaattatgtagt	440719	-	see also 5789 line	-
20970	DC-UbP	NM_152277.1	342	tggcaccgccaatacaatgata	415300	-	see also 10360 line	-
20971	DC12	NM_020187.1	392	tctgtagtacacgtaattggaga	375876	-	see also 9826 line	-
20972	DC13	NM_020188.1	214	atgcaacgtcttgattacttgc	375884	-	-	-
20973	DC6	NM_020189.4	137	aagagaacgcctcaaaagattgc	375898	-	-	-
20974	DCLRE1A	NM_014881.1	2453	gtgtgccagttggttaagctaca	345177	-	see also 6075 line	-
20975	DCLRE1B	NM_022836.2	234	tggcaccgcacgtctcttctct	384491	-	-	-
20976	DCLRE1C	NM_022487.1	1863	gtgacaatagttcttagtactgg	383424	-	-	-
20977	DCNP1	NM_130848.1	847	tgtcttcgcactgatataact	407097	-	-	-
20978	DCOHM	NM_032151.2	88	tagggcttagcggcgcatgtcatca	398382	-	-	-
20979	DCP1B	NM_152640.3	395	cagattgtccatctatggaatt	419427	-	-	-
20980	DCP2	NM_152624.3	1353	gggacagcccggtggcatgtatg	419138	-	-	-
20981	DDA3	NM_032836.4	635	agggagtgtaaccacttgcaatct	401159	-	-	-
20982	DDX27	NM_017895.6	342	gagggcagccactacattagatg	363676	-	-	-
20983	DEADC1	NM_182503.1	752	ctgtggagcgcgtcattatgtgt	433980	-	-	-
20984	DEPC-1	NM_139178.1	1220	ctgaccttctggacagctctatcc	409447	-	-	-
20985	DERP6	NM_015362.2	153	gtgtggggagcaagtcgatctcc	351823	-	-	-
20986	DEX1	NM_014015.3	648	tccggagctcgacgcttttgatgc	339145	-	-	-
20987	DIBD1	NM_024740.1	217	gggcaccggagccgaggttatctgg	389772	-	see also 8718 line	-
20988	DIP13B	NM_018171.2	1556	tggacgcgccttcattcattogata	367954	-	-	-
20989	DIRC1	NM_052952.1	503	taggtctgaattgaataactgtga	405502	-	-	-
20990	DIRC2	NM_032839.1	787	gagcagcagggcgcatat'aaag	401896	-	see also 9304 line	-
20991	DISP2	NM_033510.1	2822	cgggaacagtcctcggactacaacc	404046	-	-	-
20992	DJ1042K1					-	-	-
20992	O.2	NM_015705.3	202	cagccctgactcctcgagcatatgg	355213	-	see also 6539 line	-
20993	DJ12208.2	NM_020466.3	206	gtgcacccgaagagagatacaatc	377728	-	-	-
20993	DJ167A19.					-	-	-
20994	1	NM_018982.3	778	gggagagagagaggtaccattatg	374001	-	see also 7641 line	-
20995	DJ465N24.	NM_020317.2	494	acgggttcaccagagagatactac	376483	-	-	-
20995	2.1					-	-	-
20996	DJ667H12.					-	-	-
20996	2	NM_019605.2	922	taggtagtgcactctatttacaag	375499	-	-	-
20997	DJ79P11.1	NM_032821.1	113	gaggacagcggttaacaactct	401124	-	-	-



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20998	DKFZp313 N0621	NM_173826.1	1101	cagccagtagttgacactgaaga	428428	-	-	-	-
20999	DKFZp434 A1022	NM_021185.3	2001	tgggtggcgaacaacaacaaga	380688	-	-	-	-
21000	DKFZp434 A1315	NM_032132.2	256	atgcgcttatggacaagatgc	398050	-	-	-	-
21001	DKFZp434 A1319	NM_032140.1	878	gtggacttcattgcacaaatgc	398323	-	-	-	-
21002	DKFZp434 A1721	NM_017609.2	1602	gtgttcgatgaaggacaaatttc	359421	-	-	-	-
21003	B0335	NM_015395.1	3472	ctgggtgatacgccaacaaagtgc	352217	-	-	-	-
21004	DKFZp434 B0417	NM_013377.2	2267	gcgcgcgcgcgtgagttcatga	338897	-	-	-	-
21005	B1231	NM_178275.3	2045	gtgcggcaggcgtgtcagtatga	430691	-	-	-	-
21006	B168	NM_015434.1	830	cagcgtcatctttgttgatata	352788	-	-	-	-
21007	DKFZp434 B227	NM_032263.2	1616	tgtgtggcgaaggcactatgatacg	399134	-	-	-	-
21008	C0328	NM_017577.1	2142	aagatcaggcccatogtttaag	359337	-	-	-	-
21009	DKFZp434 C171	NM_015621.1	1111	ctggccatttgacataaaggaga	354618	-	-	-	-
21010	DKFZp434 C1714	NM_152834.2	303	atggaggcggctgcgatgaactgg	421377	-	-	-	-
21011	C245	NM_015426.2	563	gggaatgtgtccactcgtattgt	352631	-	-	-	-
21012	DKFZp434 D1335	NM_015578.1	225	cggacagatcgtccaataccacc	354295	-	-	-	-
21013	DKFZp434 D146	NM_015595.2	289	gagccccaacgggttaactaatta	354361	-	-	-	-
21014	E2220	NM_017612.2	381	ttgggtgaacgataactaagttaga	359537	-	-	-	-
21015	DKFZp434 F0318	NM_030817.1	325	cggatctctcgtcgatcttctgc	395345	-	-	-	-
21016	DKFZp434 F1017	NM_032135.2	345	aagctaccocatgtatttgtaaat	398196	-	-	-	-
21017	DKFZp434 F1719	NM_032248.1	366	tggatgtctaggttgtagaaacc	399010	-	-	-	-
21018	DKFZp434 F2021	NM_015412.1	1216	aagcaaccggcttaaacatctgg	352324	-	-	-	-
21019	G0522	NM_017566.2	637	aagtacacgggattacatctact	359124	-	-	-	-

see also 7049 line

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21020	DKFZp434 G0625	NM_181775.2	574	ggccgtcaatcggtattacaag	433142	-	-	-	-
21021	DKFZp434 G072	NM_032149.1	988	ttgcgagataaacctgttaact	398374	-	-	-	-
21022	DKFZp434 G118	NM_032266.1	538	gagctctacttccacaatagatt	399173	-	-	-	-
21023	DKFZp434 G156	NM_022742.2	2633	gagaactgtcgcaagacttatga	383818	-	-	-	-
21024	DKFZp434 H0115	NM_031421.1	170	gagcttcagcaacgccttttacc	396894	-	-	-	-
21025	DKFZp434 H0820	NM_022833.1	510	atgcggtcactactactctgc	384480	-	-	-	-
21026	DKFZp434 H2010	NM_032129.1	1366	ctgacacacacttcggaaacatca	397953	-	-	-	-
21027	DKFZp434 H2215	NM_017559.1	313	ttgctgaaccccatcaaataggc	359080	-	-	-	-
21028	DKFZp434 099	NM_032269.3	1476	aggactgcagtgtaaccaatatt	399240	-	-	-	-
21029	DKFZp434 1020	NM_194295.1	211	aggagtgagaaattgttagtttg	436501	-	-	-	-
21030	DKFZp434 1916	NM_032245.1	403	aggaaactgatccttcatttttc	399008	-	-	-	-
21031	DKFZp434 J0113	NM_032130.1	2271	aagcgaatcaaccatgtacaaatc	397968	-	-	-	-
21032	DKFZp434 J046	NM_015671.2	1045	aagctgaagaccacttttcaac	354962	-	-	-	-
21033	DKFZp434 J154	NM_015610.1	700	gtgtgcgtgtcaatcaacaacg	354597	-	-	-	-
21034	DKFZp434 K1172	NM_031290.1	369	cagtattcgccagagaactaa	396524	-	-	-	-
21035	DKFZp434 K1421	NM_032141.1	1601	aagcggaaacaatgaagaaactgt	398351	-	-	-	-
21036	DKFZp434 K1815	NM_152892.1	512	aggatgcgtctcaacttactct	421501	-	-	-	-
21037	DKFZp434 K2435	NM_032256.1	691	ctgaagctgtgtgtgtacttgt	399042	-	-	-	-
21038	DKFZp434 L0117	NM_022778.2	767	cagcacaaagtaaggaggtgtaca	384143	-	-	-	-
21039	DKFZp434 L0718	NM_032139.1	770	gagatatacgtccatcatgaat	398280	-	-	-	-
21040	DKFZp434 L0850	NM_017558.1	2926	gggaagctggatccaacagttgt	359068	-	-	-	-
21041	DKFZp434 L142	NM_016613.4	1801	atgcacacgggggtcaaaagtatta	358430	-	-	-	-

see also 6509 line

see also 8469 line

see also 7032 line

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21042	DKFZP434 L1717	NM_032136.3	1596	gtggctccgccacgggtgcaatga	398257	-	-	-
21043	DKFZp434 M202	NM_182499.1	503	gagtaaccacctgggggattatgg	433987	-	-	-
21044	DKFZp434 N035	NM_032262.1	288	ctgcagctagcttcgattgttcc	399105	-	-	-
21045	DKFZp434 N1415	NM_032133.2	101	aggattcccgctcagaataact	398088	-	-	-
21046	DKFZP434 O047	NM_015594.1	2877	aagggaatcagtgctctattatc	354353	-	-	-
21047	DKFZp434 O0527	NM_194302.1	2109	tgggctacaacccccatattatg	436658	-	-	-
21048	DKFZP434 P0316	NM_032134.1	1231	ttgcctgtctcgatcaacatgg	398149	-	-	-
21049	DKFZp434 P055	NM_173466.1	1321	ttgtcagctaaggcgaataatgc	424866	-	-	-
21050	DKFZp451 M2119	NM_182585.1	3329	aagttctgtaggcttataacata	434523	-	-	-
21051	DKFZp547 A023	NM_018704.1	1020	tagccctaattgagcaattgaaga	372706	-	see also 7571 line	-
21052	DKFZp547 B1713	NM_152379.1	284	gagcgcttcgagcttctcaagg	415992	-	-	-
21053	DKFZp547 C176	NM_018712.2	511	ctgcgtagagaggcctatgattc	372789	-	see also 7574 line	-
21054	DKFZp547 E052	NM_032276.2	804	caggacggcaataactttaaat	399335	-	-	-
21055	DKFZP547 E1010	NM_015607.2	403	cagccgacgccagtgaaattcg	354469	-	see also 6506 line	-
21056	DKFZp547 G0215	NM_173643.1	1052	cagcaagtgtaattagatgaaa	426937	-	-	-
21057	DKFZP564 A022	NM_030954.2	687	tggctctaccacactttaactgagg	395683	-	-	-
21058	DKFZP564 B1162	NM_031305.1	790	ctggaggatactgttcgtatga	396622	-	-	-
21059	DKFZP564 D1116	NM_015631.1	852	tggggaacccattcttacttact	354715	-	see also 6524 line	-
21060	DKFZP564 D172	NM_032042.3	1121	cagacgcgtcacgagtaacttcc	397728	-	-	-
21061	DKFZP564 G2022	NM_015497.2	139	ctgtgcgcgacccggtccaatgg	353576	-	see also 6438 line	-
21062	DKFZp564I 1922	NM_015419.1	5740	gtgatagcgaagggtcaagtaca	352488	-	receptor_activity	-
21063	DKFZP564 J047	NM_032126.1	715	cagaggcctcaggccttcaaaa	397918	-	-	-

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21064	DKFZP564 K0322	NM_032040.1	790	cgaggaggagcgcgactatttgc	397679	-	-	-	-
21065	DKFZP564 K0822	NM_030796.2	220	aggactctatccaacctattata	395096	-	kinase related	-	-
21066	DKFZP564 K1964	NM_015544.1	864	ctgcaggaggcagctcgcgaattta	353845	-	-	-	-
21067	DKFZP564 K2062	NM_015421.1	471	tggcgaggagcacacatactgtcc	352595	-	-	-	-
21068	DKFZP564 M082	NM_014042.1	352	aagcatcgcggagagaaagacaaca	339372	-	-	-	-
21069	DKFZP564 O043	NM_020319.1	398	ggacacatggagccgagtgtaatt	376506	-	see also 7832 line	-	-
21070	DKFZP564 O0463	NM_015420.4	1626	gtgtctgtagtttcgataaatc	352566	-	see also 6405 line	-	-
21071	DKFZP564 O0523	NM_032120.1	213	ggcgattcgccttatattgtgc	397810	-	-	-	-
21072	DKFZP564 O0823	NM_015393.1	508	ggcggtggaggtccacttaacaacc	352197	-	-	-	-
21073	DKFZP564 O1664	NM_030800.1	1300	atggtagcgattgttcaattagg	395174	-	-	-	-
21074	DKFZP564 O1863	NM_015633.1	520	cgccacgggtccacgttagttat	354744	-	-	-	-
21075	DKFZP566 A1524	NM_030797.1	1137	aagcaactgaacgatgaatcaac	395118	-	-	-	-
21076	DKFZP566 B183	NM_015509.2	399	atgccttcgacttaattgtctcc	353632	-	see also 6445 line	-	-
21077	DKFZP566 D1346	NM_030816.1	422	ctgccttcggcggtacatttacc	395298	-	-	-	-
21078	DKFZP566 D193	NM_015391.1	209	ctgtcaaaagacaagaatgaag	352187	-	-	-	-
21079	DKFZP566 F0546	NM_015653.1	443	ctgtagggtatcaatgacttcc	354926	-	-	-	-
21080	DKFZP566 F084	NM_015448.1	129	ggagagacgagtgaaactacttgt	353062	-	-	-	-
21081	DKFZP566 F2124	NM_015630.2	2115	cagttggccacaccactacaaaac	354698	-	see also 6510 line	-	-
21082	DKFZP566 K1924	NM_015463.1	483	caggctcgagaatatttccattgg	353313	-	-	-	-
21083	DKFZP566 M1046	NM_032127.1	1045	tcgcggatcactcttacttctgc	397926	-	see also 9079 line	-	-
21084	DKFZP566 M114	NM_032128.1	234	ctgcggatcgtcgagctaaact	397941	-	-	-	-
21085	DKFZP566 N034	NM_030923.2	841	ctgatcggtcctcaccatttgc	395503	-	-	-	-

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21086	DKFZp586 C1924	NM_032273.2	418	ctgactgctgttatttggtag	399319	-	-	-	-
21087	DKFZp586 D0919	NM_015433.1	548	ctgggggattgaaccatcatgtct	352788	-	-	-	-
21088	DKFZp586i 1420	NM_152747.1	2130	tagggactgtgtacctttattca	420446	-	-	-	-
21089	DKFZp586 L0724	NM_015462.2	383	aggtctgttctgtgtttacagg	353304	-	-	-	-
21090	DKFZp586 M1019	NM_015603.1	151	cagccacactcgtttgaaatca	354455	-	-	-	-
21091	DKFZp586 M1120	NM_031294.2	1206	aagcaactgtcgagtttaagtgc	396573	-	-	-	-
21092	DKFZp586 M1523	NM_015476.1	920	aagagaccgactcctttgtgaat	353429	-	-	-	-
21093	DKFZp586 N0721	NM_015400.1	1085	aggtaacccgtcttcacaatgtat	352301	-	-	-	-
21094	DKFZp667 B1218	NM_177966.3	1087	tgcactaccgccagaaacctatc	430319	-	-	-	-
21095	DKFZp686 A17109	NM_198465.1	1574	cagtgcaactaagcctctaaagg	438124	-	-	-	-
21096	DKFZp686 B0797	NM_198539.1	527	ggagggcactgtccagaagtttg	439300	-	-	-	-
21097	DKFZp686 B2197	NM_194319.1	968	ccgtgtctcagctcttatagatc	436837	-	-	-	-
21098	DKFZp686 G0786	NM_198460.1	658	ttgaacggtcaccctatcacaga	437902	-	-	-	-
21099	DKFZp686 L1814	NM_194282.1	907	aagttaccaccgcagcaaatata	436247	-	-	-	-
21100	DKFZp686 L20145	NM_019045.2	1288	aagttacgggttaaggattctcagc	374688	-	-	-	-
21101	DKFZp686 N19164	NM_194325.1	1468	cagcgaattcatgcagagataaa	436867	-	-	-	-
21102	DKFZp686 O1689	NM_182608.2	823	gggggctcacggcggttaatgaag	434633	-	-	-	-
21103	DKFZp727 C091	NM_015443.1	3493	cgggacactccgcgacacttagc	352987	-	-	-	-
21104	DKFZp727 G131	NM_145111.1	557	ctgcagtcctgggtatagactttgc	413505	-	-	-	-
21105	DKFZp727 M111	NM_015540.2	1944	cagggcctaccctagctctatatac	353772	-	-	-	-
21106	DKFZp761 A052	NM_017602.2	570	aggtggcgccagggctacaacagct	359391	-	-	-	-
21107	DKFZp761 A078	NM_194292.1	905	ctgagttagaagcgggctaataaa	436422	-	-	-	-

see also 10306 line

see also 7046 line

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21108	DKFZp761 B107	NM_173463.2	686	gggcacgagagaccgcacattga	424838	-	-	-
21109	DKFZp761 B1514	NM_032288.3	580	atgaatgctcacctctaagtga	399369	-	-	-
21110	DKFZp761 C121	NM_032290.1	597	ttggcaggagatagacatcaatgt	399419	-	-	see also 9136 line
21111	DKFZp761 C169	NM_022913.1	1581	gggaatatctccgaatcctaaaa	384820	-	-	see also 8531 line
21112	DKFZp761 D221	NM_032291.1	2070	caggctacatatataacgttga	399494	-	-	see also 9139 line
21113	DKFZp761 E1824	NM_022486.1	1618	acgtccgggtaccacatacaatg	383376	-	-	-
21114	DKFZp761 F241	NM_031455.2	475	tggccaggactactctctatttc	397080	-	-	-
21115	DKFZp761 H0421	NM_173079.1	742	gagcttcgtcagcgtgtatagtc	424581	-	-	-
21116	DKFZp761 H079	NM_144996.2	966	cagaccggccatcattggaatca	412524	-	-	-
21117	DKFZp761 H1710	NM_031297.2	231	gtgggcaactcctacaatgtcacc	396590	-	-	-
21118	DKFZp761 K1423	NM_018422.1	1423	tcgggtgccataaataagtcttc	371347	-	-	-
21119	DKFZp761 L0424	NM_019590.1	2781	ccgggctgacagtcacgttaaag	375361	-	-	see also 7715 line
21120	DKFZp761 L1417	NM_152913.1	727	aagactcgtgtgtctattataac	421684	-	-	-
21121	DKFZp761 L1518	NM_198075.1	1114	aggtgcccaggggctacaactac	436971	-	-	-
21122	DKFZp761 O1114	NM_181644.2	1411	caggctcagggcagctatagttt	432644	-	-	-
21123	DKFZp761 O0113	NM_018409.2	1340	aagtatgctcgggctgtattact	371189	-	-	-
21124	DKFZp761 O17121	NM_032287.1	250	atgaatggagggtgtacagatca	399356	-	-	-
21125	DKFZp761 P1121	NM_152906.2	435	ccgaggcggagggtgaacttgtca	421676	-	-	-
21126	DKFZp762 C2414	NM_178542.2	1111	gtgtcctccatgagaatcatata	431156	-	-	-
21127	DKFZp762 E1312	NM_018410.2	1719	aagggaatcgttacgagaaatta	371234	-	-	-
21128	DKFZp762 G199	NM_197956.1	871	aggtcctcggccctatgatcaaa	436915	-	-	-
21129	DKFZp762 I194	NM_152384.1	422	atggcagctacacagagcttatga	416041	-	-	see also 9843 line

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21130	DKFZp762	NM_018710.1	728	aggcatttcgagcaacctatgt	372773	-	see also 7572 line
21131	DLNB14	NM_198489.1	433	atgcgcgattcaagaatacatg	438537	-	-
21132	DNAJ09	NM_015190.3	373	gcgtattgcggctactcttaa	349535	-	-
21133	DNAJD1	NM_013238.1	525	gggaactgtaagaatttgatag	338361	-	-
21134	DNAPT6	NM_015535.1	1735	tagtgctggtaggggttcacagt	353750	-	see also 6480 line
21135	DOCK5	NM_024940.3	1529	ctgttaagcgactaatagcatt	392343	-	-
21136	DOLPP1	NM_020438.2	166	cggtttcgaccctcatcatat	377468	-	see also 7876 line
21137	DOM32	NM_005510.2	1119	ctgtgcgcctcttcttagcttg	334047	-	-
21138	DP1L1	NM_138393.1	520	toftgcgtccgtgttcttaagg	407943	-	-
21139	DPGR1	NM_080870.2	559	aggaacagagagccatccatacc	406871	-	-
21140	DPH2L2	NM_001384.2	1101	ctggcaagcgtagctatgttg	330198	-	-
21141	DPPA4	NM_018189.1	458	gggaacgctccctcaagttct	368231	-	-
21142	DREV1	NM_016025.2	1036	aaggagacatgataatgactac	355956	-	see also 6625 line
21143	DT1P1A10	NM_058163.1	441	gggtcacagctacgaatgatgg	406187	-	-
21144	DTNBP1	NM_032122.3	308	ctgtctgattagaattacttagc	397879	-	-
21145	DJFD1	NM_138419.2	630	gagtgacgagcggcattgttgg	408027	-	schizophrenia(精神分裂病)
21146	DULLARD	NM_015343.3	501	aagctctggagcttcttcattta	351752	-	-
21147	DUSP15	NM_080611.3	369	tggactactactcggaaacttca	406405	-	phosphatase
21148	DYX1C1	NM_130810.1	1171	aggccagaaagcaatgaataact	407022	-	see also 9554 line
21149	DZIP1	NM_014934.2	1550	cgggagtgagatcgtctgttga	346050	-	-
21150	E2IG2	NM_016505.1	188	ctggaccacacgggtgagaaag	358147	-	-
21151	E2IG4	NM_015516.1	798	cgggcaaccccccaagctaaactgg	353655	-	-
21152	E2IG5	NM_014367.2	611	atgtgtgatgagccatcttca	340417	-	-
21153	EA1	NM_033083.5	956	ggaggctgaagttagacatttg	403204	-	-
21154	EA2	NM_018456.3	102	togcagcgggttctcaagttag	371790	-	-
21155	EB-1	NM_152788.2	2174	aagccttgatcgacatgcattg	421341	-	-
21156	EB-1	NM_020140.1	958	ggacttagggggagacgaatcaac	375659	-	see also 7764 line
21157	ECRG4	NM_032411.1	443	atgaatactatggcgactactac	400203	-	-
21158	EDRF1	NM_015608.2	3090	ttgtccactacttacttactat	354571	-	-
21159	EEG1	NM_017611.2	367	tggctggcccttcaactagtttg	359513	-	-
21160	EFA6R	NM_015310.1	1349	ctggccgagcaccgctcatatcc	351422	-	see also 6322 line
21161	EG1	NM_025205.1	189	gtgagtcaggaactatgtcaatgg	394414	-	-
21162	EGFL1	NM_198283.1	2039	cagggaatacgttatctatgttt	437643	-	-
21163	EIF2C3	NM_024852.2	2808	aagataccttacccacaatgtac	391509	-	see also 8784 line
21164	EIF2C4	NM_017629.2	483	ttgagcgggtatagggttgatag	359742	-	see also 7058 line
21165	ELAC1	NM_018696.1	333	ctgtagggtctcgggactttatc	372648	-	see also 7565 line
21166	ELAC2	NM_018127.4	1360	caaggaggatgccattattacttg	368996	-	prostate cancer(前立腺癌)
21167	ELKS	NM_015064.2	2776	gcgagcagggagagacaatctca	347576	-	see also 6218 line
21168	ELIs1	NM_152793.1	120	ctgtgtaggagcagatctgaga	421370	-	-
21169	ELP4	NM_019040.2	17	atggcaacctcggtagtgttgc	374586	-	see also 7673 line
21170	ELSPBP1	NM_022142.3	361	aagattaccacgtgtatcttc	382467	-	-
21171	EMCN	NM_016242.2	823	aagctttaccctgaagacaat	356602	-	-
21172	EMILIN3	NM_024756.1	2832	gagcagatgtgtttgagtaaac	390105	-	-

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21173	EML5	NM_183387.1	1874	cagctcagtaactaatgtcaga	435903	-	see also 10298 line	
21174	EMU1	NM_133455.1	119	tgtgaccgcacacatctatgc	407210	-	see also 9579 line	
21175	ENAH	NM_018212.2	518	aggacatcaggctgataaac	368483	-	see also 7322 line	
21176	ENTH	NM_014686.2	377	atgcttggtcacgaatttaaa	341964	-	-	-
21177	EPM2AIP1	NM_014805.2	290	gtgaccacaggtatttggagg	343788	-	-	-
21178	EPN2	NM_014964.2	414	atgacgacttcgtctatcagag	346400	-	-	-
21179	EPN3	NM_017957.1	2016	gggacggccgacgctaaacaga	364870	-	-	-
21180	EPBP9	NM_015681.2	168	ggagtcctagcgtcttctact	354994	-	-	-
21181	EPST11	NM_033255.1	967	gggtaacagctggggtataga	403643	-	-	-
21182	ERAS	NM_181532.2	506	cagtgaggactgcattctgaatg	432385	-	signal_transduction	bladder transitional cell carcinoma(膀胱移行上皮癌)、bladder cancer(膀胱癌)、breast cancer(乳癌)、non-small-cell lung cancer(非小
21183	ERMAP	NM_018538.2	1383	cagcacctctagtcattgttca	372178	-	-	-
21184	ESAM	NM_138961.1	826	gtggcactgcccaatgaatgt	409280	-	-	-
21185	ESPN	NM_031475.1	455	gggtgcagacaaagacaattct	397167	-	-	-
21186	ESRRB1	NM_018010.2	810	acgtgtactaccgcaactgaag	365265	-	see also 7196 line	-
21187	ESSPL	NM_183375.1	277	gtgtgtagtagctcgattacagt	435698	-	-	-
21188	EST1B	NM_015327.1	707	atgaattagctggcgtagatacc	351598	-	-	-
21189	ETAA16	NM_019002.2	1015	cagaaatgtagcgacagactaag	374300	-	see also 7655 line	-
21190	ETEA	NM_014613.1	259	caggatctacagctatgtgtct	341145	-	see also 5781 line	-
21191	ETR101	NM_004907.1	137	ctgtcgggtgggaagtatca	333242	-	-	-
21192	EVC2	NM_147127.2	1672	ctggaggctgtcgaaacacaaat	414977	-	-	-
21193	EVER2	NM_152468.3	1517	tggcagcttggggagtgtctcc	416988	-	-	-
21194	EV12B	NM_006495.2	1380	cagtcaggagttctctattcc	335690	-	-	-
21195	F25965	NM_019104.1	379	ccgcagcgcacacacatatgt	375232	-	-	-
21196	F8A	NM_012151.2	129	ccgctacggctggtatcgaaca	337712	-	ETS	-
21197	FAM	NM_018147.1	134	cggagtcacaaagatgaattg	367676	-	-	-
21198	FAM11A	NM_032508.1	970	tcgtcgtgccctcttctacatt	400464	-	-	-
21199	FAM13A1	NM_014883.1	1756	caggtaccggctggtcaaacaga	345288	-	see also 6077 line	-
21200	FAM13G1	NM_198215.1	1359	ccgcttatgaccgatagagaat	437272	-	see also 10314 line	-
21201	FAM18B	NM_016078.1	791	aggtgcccaacctgtgtgtaca	356217	-	-	-
21202	FAM20A	NM_017565.1	1354	tggaccggcaccattatgagatg	359104	-	-	-
21203	FAM20B	NM_014864.1	452	gggctttcaccaaatgatgact	344941	-	-	-
21204	FAM20C	NM_020223.1	1731	gggctccgcgtcgtgctaaagg	376255	-	-	-
21205	FAM8A1	NM_016255.1	969	tggttgtgcaattatatacaga	356643	-	-	-
21206	FANCL	NM_018082.1	222	tagtgataccattgaatagtag	365984	-	-	-
21207	FANK1	NM_145235.2	935	tggaaagcggcccttctgtgtg	413737	-	-	-
21208	FAPP2	NM_032639.2	1379	cagacagccctaaagaatccaac	401161	-	-	-
21209	FATE	NM_033085.1	402	aggacagtttccattatgac	403215	-	-	-
21210	FBS1	NM_022452.1	234	acgtgcgtgggtctacatgac	382832	-	-	-
21211	FBX30	NM_033182.4	795	ggggcgtggacactcattactgg	403565	-	-	-
21212	FBXL12	NM_017703.1	271	cggctcgtcagatcttctct	361079	-	-	-
21213	FBXL8	NM_018378.2	318	ctgcctgaccacattcaacc	370924	-	-	-
21214	FBXO15	NM_152676.1	887	ttgaccatctaccatgattgg	419602	-	-	-



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21215	FBX016	NM_172366.2	634	ctgacgttcaactagttacaagc	424465	-	-	-
21216	FBX022	NM_012170.2	449	aagagtgctgtggccataagaga	337721	-	see also 5175 line	-
21217	FBX025	NM_012173.3	816	ttggcagtagaatactattctcg	337744	-	-	-
21218	FBX027	NM_178820.3	669	acgacagcggctgtgtatcacaga	431380	-	-	-
21219	FBX032	NM_058229.2	1021	cggcagatcgcgaacacgattaat	406259	-	-	-
21220	FBX034	NM_017943.2	303	aagctagccacataacataaagt	364479	-	-	-
21221	FBX06	NM_018438.2	533	ttgtcacatctactacgaatgtgc	371546	-	see also 7478 line	-
21222	FBXW5	NM_018998.2	1334	ctggaccacgtcatagacataca	374101	-	see also 7651 line	-
21223	FBXW7	NM_018315.2	1471	gggcatactaataagatctattc	370198	-	see also 7394 line	-
21224	FBXW8	NM_012174.1	548	gtgtgtcattgcgggatatatcatc	337757	-	-	-
21225	FCGBP	NM_003890.1	2604	gggtccggggggccacacactatgt	332255	-	-	-
21226	FEM1A	NM_018708.1	1009	gggagctacgtatgggataaga	372734	-	-	-
21227	FEZL	NM_018008.2	979	gtgttaaacgtcactataatct	365233	-	see also 7195 line	-
21228	FGIF	NM_017704.1	412	agggcaactcaactgtaacactagg	361092	-	-	-
21229	FILIP1	NM_015687.1	537	ggcacccgtatcacgagttagaga	355019	-	-	-
21230	FIS	NM_175616.2	535	ctgtgtctcctcctcgtatgaattc	429153	-	-	-
21231	FKRP	NM_024301.2	1658	tggcgcagggcgcctaacactac	386214	-	-	-
21232	FKSG14	NM_022145.2	1034	aagatccaaccccgataagatta	382524	-	-	-
21233	FKSG32	NM_031307.2	273	aagacacgtagccctagaatag	396661	-	see also 9012 line	-
21234	FKSG42	NM_032032.1	1671	ctggagtgtaagtcttaataatagg	397665	-	-	-
21235	FLJ0005	NM_020447.2	348	aagtttaacaaggctctactcgc	377482	-	-	-
21236	FLJ0007	NM_033449.1	707	atgccactcctcagccactactac	404030	-	see also 9425 line	-
21237	FLJ1006	NM_017989.1	2308	atgagtggtctaggccctatattt	364932	-	-	-
21238	FLJ10036	NM_017975.2	914	ctggcatcgtgttggtatattcc	364931	-	see also 7188 line	-
21239	FLJ10055	NM_017983.3	140	tggaaactaaagccgggtataagc	365034	-	-	-
21240	FLJ10081	NM_017991.3	458	aaggcacgcagcgtgtagaatga	365107	-	-	-
21241	FLJ10099	NM_017994.3	623	ccgcaacgtcacccactctgtact	365143	-	-	-
21242	FLJ10103	NM_017996.2	805	gtgatacacgcacgttcaagtgt	365175	-	-	-
21243	FLJ10116	NM_018000.1	463	acgacagaaccctgtacaatttg	365207	-	-	-
21244	FLJ10154	NM_018011.1	354	gtgcggagagcgttccaaatctcg	365280	-	see also 7198 line	-
21245	FLJ10156	NM_019013.1	328	gggtgcccgtgtcccagagaatcc	374469	-	-	-
21246	FLJ10159	NM_018013.1	772	aggaaggctcctccgaattagaaa	365289	-	-	-
21247	FLJ10178	NM_018015.2	838	tagagggcagcccggtatcgtatg	365365	-	see also 7211 line	-
21248	FLJ10188	NM_018017.2	2170	atgtctagaagatgaacgattaa	365420	-	-	-
21249	FLJ10193	NM_018019.2	423	gggcaagttaggacgaagaatga	365453	-	-	-
21250	FLJ10199	NM_018022.1	1013	ccgtgaaagtttggaaggattaa	365480	-	-	-
21251	FLJ10204	NM_018024.1	519	gtgatccgtgcagattcatttt	365473	-	-	-
21252	FLJ10213	NM_018029.3	895	ggggaaaggggtactccttatgc	365491	-	-	-
21253	FLJ10232	NM_018033.1	353	gtgtcttttgggtcactataga	365524	-	-	-
21254	FLJ10233	NM_018034.2	1271	tgggacatccgcgaatttaataa	365556	-	-	-
21255	FLJ10241	NM_018035.1	319	tggatcaggccagataagtatgg	365588	-	-	-
21256	FLJ10246	NM_018038.1	441	ctgtagaggggctcatttcttga	365682	-	-	-
21257	FLJ10251	NM_018039.2	2156	cagattatccaccgcgtcaaatgg	365697	-	-	-
21258	FLJ10260	NM_018042.2	504	aggggtctcacagagctatgtgctc	365700	-	-	-

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21259	FLJ10287	NM_019083.1	52	gagggtagatgcgggtactatgt	375032	-	-	-
21260	FLJ10298	NM_018050.2	415	gagccgtatatacttaactca	365852	-	-	-
21261	FLJ10300	NM_018051.2	3076	aggagacacacatccaacatcac	365916	-	-	-
21262	FLJ10305	NM_018052.3	2275	gagtgcccatcttcacatctt	365932	-	see also 7217 line	-
21263	FLJ10307	NM_018053.2	1191	aggcgcatgacccattagcaca	365934	-	-	-
21264	FLJ10315	NM_018056.1	1031	ctgtctgggtctctgaagacaca	365935	-	-	-
21265	FLJ10350	NM_018067.2	1427	cggtagcccttagcaaaccaatg	366045	-	-	-
21266	FLJ10359	NM_018072.3	421	atgtcatgcgccttagatgatact	366123	-	-	-
21267	FLJ10374	NM_018074.3	204	gtgtaaagcgtgaggagaaataca	366187	-	-	-
21268	FLJ10375	NM_018075.2	797	tggccaactctcctaattactccc	366203	-	see also 7232 line	-
21269	FLJ10385	NM_018081.1	919	cgggaggaacccgattcatact	366380	-	-	-
21270	FLJ10404	NM_019057.2	4157	ctgtgaactggagaccacttcagc	374800	-	-	-
21271	FLJ10407	NM_018087.3	271	cggcaggctcgcgggacatactgt	366498	-	see also 7249 line	-
21272	FLJ10415	NM_018089.1	393	ctggcatcgtgttaacctaaagc	366565	-	-	-
21273	FLJ10420	NM_018090.3	322	ggcgacggcggtttatgggaat	366578	-	-	-
21274	FLJ10460	NM_018097.1	336	ggatcccttaggcaagactgt	366648	-	-	-
21275	FLJ10462	NM_018099.3	1536	ttgacgtgcgcagttgaactgg	366690	-	-	-
21276	FLJ10490	NM_018111.1	157	ccggaaagacgcgctgtgttgg	366811	-	-	-
21277	FLJ10493	NM_018112.1	576	aggtgtaccattataacgaatt	366830	-	-	-
21278	FLJ10498	NM_018115.1	1770	cagttcgacaaataaagagaaga	366851	-	-	-
21279	FLJ10520	NM_018124.2	1078	gtgtgccagactataatgtctgg	366955	-	-	-
21280	FLJ10521	NM_018125.2	2394	ctggagtcaacagggttacatttgg	366979	-	see also 7268 line	-
21281	FLJ10534	NM_018128.4	2435	atgtgctcgtcgaattcattgatt	367028	-	-	-
21282	FLJ10539	NM_018130.1	1781	ctgtgttaaacccgcagcaatt	367096	-	-	-
21283	FLJ10546	NM_018133.2	1548	aagtactccgcagcttagaaact	367177	-	-	-
21284	FLJ10547	NM_018134.1	512	cagccaactggccatggaattgc	367206	-	-	-
21285	FLJ10565	NM_018140.1	723	gggcccgcagttgtgacagtlacc	367592	-	-	-
21286	FLJ10569	NM_018142.1	1224	aagaaatcgtcacattgtagtca	367634	-	see also 7273 line	-
21287	FLJ10579	NM_018145.1	1065	gtgagcgagagaagatcatatgc	367665	-	-	-
21288	FLJ10597	NM_016501.2	474	tagctcatggggctttataag	357899	-	-	-
21289	FLJ10652	NM_018169.1	199	aagcgagttcattcaaatattagt	367900	-	-	-
21290	FLJ10661	NM_152563.1	262	gcgggctctcaattatcatatgg	367981	-	-	-
21291	FLJ10665	NM_018173.1	193	tctgggctccgcattagagact	367982	-	-	-
21292	FLJ10697	NM_018181.3	1072	cagcgttatcgtcaagaattgttc	368066	-	-	-
21293	FLJ10700	NM_018182.1	1829	cagagagtcgaagtccttcatatt	368145	-	see also 7307 line	-
21294	FLJ10724	NM_018194.1	354	aggatgcgacgaactttagtgg	368304	-	-	-
21295	FLJ10737	NM_018198.1	605	ttgogctcagcagcagtaacttcg	368347	-	-	-
21296	FLJ10743	NM_018201.2	98	ctgcgggaactcagcttttagtgg	368373	-	-	-
21297	FLJ10747	NM_018202.2	1970	atgcccagcataacaatacagtc	368415	-	-	-
21298	FLJ10748	NM_018203.1	1172	tggaccaggtttcccaacattcc	368421	-	-	-
21299	FLJ10781	NM_018215.2	500	gagcaccatccccgtgaattcc	368523	-	-	-
21300	FLJ10786	NM_018219.1	1379	ctgcgctacgggctctgtataga	368542	-	-	-
21301	FLJ10817	NM_018076.2	2587	atgataattgctgcttagatgg	366279	-	-	-
21302	FLJ10846	NM_018241.1	546	cagtggaattcgaccttagtagc	368895	-	-	-

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21303	FLJ10871	NM_018250.1	1966	aagaagactgcacccatcatc	369133	-	-
21304	FLJ10874	NM_018252.1	1169	aggaacagcgacataagctga	369147	-	-
21305	FLJ10884	NM_019079.2	365	aaggacatagctcggattaga	374973	-	-
21306	FLJ10890	NM_018259.2	3226	ctggaatgacgcgcgtcatagtag	369347	-	-
21307	FLJ10901	NM_018265.1	504	caggatcggagcgcccttaaac	369514	-	-
21308	FLJ10902	NM_018266.1	930	tggtaacccgttggtgattag	369532	-	see also 7356 line
21309	FLJ10904	NM_018268.1	1300	gtgtacacattggaggttaaga	369590	-	-
21310	FLJ10922	NM_018273.2	161	tgggggagtagtcgaagatgtgg	369618	-	see also 7360 line
21311	FLJ10936	NM_018279.2	823	aggaaggctagtgttgattta	369666	-	-
21312	FLJ10970	NM_018286.1	577	aagagacgggagagtgcaaacgc	369698	-	-
21313	FLJ10979	NM_018289.2	222	gagcaatctctggcggaacataga	369778	-	-
21314	FLJ10996	NM_019044.2	1608	tagcgcgtccgagctaatacagt	374653	-	-
21315	FLJ10997	NM_018293.1	597	ttgattgtgtccggattttaaa	369817	-	-
21316	FLJ10998	NM_018294.3	1203	ctgagacgggtctttaagagtcg	369855	-	-
21317	FLJ11000	NM_018295.1	257	ctgctgttcatgagcatcatagt	369860	-	-
21318	FLJ11004	NM_018296.2	1262	ttgtcaatgttaggacaacattta	369883	-	-
21319	FLJ11017	NM_018302.1	763	tggagacaacgttgatcataatg	369979	-	-
21320	FLJ11021	NM_023012.3	1081	tagctgttctcagctactataac	384972	-	-
21321	FLJ11029	NM_018304.1	826	aagcacggaatccactagttaacc	370007	-	-
21322	FLJ11036	NM_018306.2	717	tggaaacccgttgccatctacttc	370028	-	-
21323	FLJ11046	NM_018309.1	1790	ctgttgtagtactgcaacacatat	370082	-	see also 7384 line
21324	FLJ11082	NM_018317.1	1449	tggatgtgttcgagcttctctgg	370250	-	see also 7399 line
21325	FLJ11088	NM_018318.2	391	tggagccaatgtatctaacatcac	370261	-	-
21326	FLJ11127	NM_019018.1	957	tggactagagcagatttgatgt	374485	-	-
21327	FLJ11171	NM_018348.4	842	tgggtagcgaatactatgaatcc	370580	-	-
21328	FLJ11184	NM_018352.1	345	ttgaaaggacttaaatogatttc	370644	-	-
21329	FLJ11193	NM_018356.1	1184	ctggtttaacctgcgattttca	370682	-	-
21330	FLJ11200	NM_018359.1	110	cagctagctactctcctaataaat	370689	-	see also 7413 line
21331	FLJ11218	NM_018363.1	624	gtgagctactctctogatatgc	370787	-	-
21332	FLJ11220	NM_018364.2	143	ggcggttcggccatttaaatgt	370798	-	see also 7417 line
21333	FLJ11235	NM_019033.1	301	cggcagaatacggctctctcagg	374584	-	-
21334	FLJ11259	NM_018370.1	365	tagtgagtgcgatctgtgaatgg	370892	-	see also 7424 line
21335	FLJ11267	NM_019607.1	659	cagatgtaccgagtttgaatcc	375511	-	-
21336	FLJ11280	NM_018379.2	1358	ctgtctaaggagggtgaacttagc	370937	-	-
21337	FLJ11286	NM_018381.1	383	acgtgcccaggacgcaccttatcc	370961	-	-
21338	FLJ11292	NM_018382.1	190	ctggccctttgcagtgatataaa	370967	-	-
21339	FLJ11301	NM_018385.1	1388	caggaatctcccaatgatcaga	370996	-	-
21340	FLJ11305	NM_018386.1	909	gagcattgtccacgttctagtca	371023	-	-
21341	FLJ11331	NM_018392.3	891	ctgaagtcggaatcatctagttc	371043	-	-
21342	FLJ11336	NM_018393.2	1667	ttgtcgcctcgttgcaactataac	371136	-	see also 7437 line
21343	FLJ11362	NM_021946.2	1447	cagagcagcgctggtgtatatat	381540	-	see also 8209 line
21344	FLJ11383	NM_014801.2	1026	ttgacccatcgttgttaagtc	343696	-	-
21345	FLJ11457	NM_024753.2	2091	aagtcgggttaccattgctaata	390014	-	-
21346	FLJ11467	NM_024963.2	1716	gggctccgggctgtgcaatatcg	392754	-	-

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21347	FLJ11506	NM_024666.2	683	gggggtggtgcatacaaca	38800	-	-
21348	FLJ11526	NM_024632.1	846	ggagcgttaaggccattatatt	388326	-	-
21349	FLJ11535	NM_024888.1	1075	ggccacagactagggtttatcagc	391715	-	-
21350	FLJ11560	NM_025182.2	1432	ttggagctagtggtgcatactgc	394292	-	see also 8874 line
21351	FLJ11712	NM_024570.1	638	gtggatacagctgtttccaaattg	387343	-	-
21352	FLJ11730	NM_022756.3	553	csagtgcagctgtttgattaga	383982	-	-
21353	FLJ11752	NM_152281.1	751	acgctcggaaagcgggttgacagg	415315	-	see also 9829 line
21354	FLJ11753	NM_024659.2	595	ggaggatttccaatatggatata	388671	-	see also 8689 line
21355	FLJ11773	NM_021934.3	945	aggtggataacggtgttgacaca	381385	-	-
21356	FLJ11785	NM_021930.2	1488	tggtgtatcgcaataaaggatat	381336	-	see also 8200 line
21357	FLJ11795	NM_024669.1	621	aagtcgaagtgcagcagatttat	388815	-	-
21358	FLJ11800	NM_024974.1	252	tagctactgtctgtgtatcaca	392760	-	-
21359	FLJ11807	NM_024954.3	334	gcggagcaaacgggatgattct	392708	-	-
21360	FLJ11848	NM_025155.1	867	ttggctcagcagcttcaactgc	394130	-	-
21361	FLJ11856	NM_024531.3	640	cagtggcagcagctgttcattct	386782	-	receptor activity
21362	FLJ12057	NM_024768.1	850	aggctccgggaccctgaacatc	390317	-	-
21363	FLJ12085	NM_022771.3	1680	tggaocggaactaccatgtacaaa	384085	-	see also 8462 line
21364	FLJ12150	NM_024736.4	888	caggcaactoaatgaatgttact	389758	-	-
21365	FLJ12168	NM_024682.1	1488	gagctcgtgcgaagggaacttga	389127	-	-
21366	FLJ12355	NM_024988.1	471	agggaggagagacaaactaactct	392776	-	-
21367	FLJ12363	NM_032167.1	65	gagcggatcacagacaacataca	398405	-	transcription regulat
21368	FLJ12436	NM_024661.2	260	aagaactgggtggagacagataga	388708	-	or
21369	FLJ12439	NM_023077.1	134	aaggaccgggacgggtgtctatcg	385243	-	-
21370	FLJ12442	NM_022908.1	935	atggcaagggtccctccattaaag	384785	-	-
21371	FLJ12448	NM_022895.1	47	gagcgttccgggaagtagtaaca	384691	-	-
21372	FLJ12505	NM_024749.2	1224	tggtgtatcaaatccgaatttag	389913	-	-
21373	FLJ12517	NM_023007.1	1122	ctgctcgggcatcaacttgaag	384936	-	-
21374	FLJ12525	NM_031206.2	226	tggaaccaggtgacgggttatct	395923	-	see also 8988 line
21375	FLJ12541	NM_022369.2	599	ctgggactgttcttatattgctc	382726	-	-
21376	FLJ12571	NM_024926.1	216	ttggagttcaaacgtcatgttgg	392269	-	see also 8808 line
21377	FLJ12572	NM_022905.2	649	ttgctgtagcactgacaagaattt	384756	-	-
21378	FLJ12577	NM_030925.1	568	gtgtgtgttagcagactctttaga	395522	-	-
21379	FLJ12584	NM_025139.2	1622	gagatacagccogtatgaaatgg	393945	-	see also 8868 line
21380	FLJ12598	NM_024754.2	581	aagttcaccacaaagatacctatgt	390079	-	-
21381	FLJ12604	NM_024621.1	1379	cagcttaccgcccatctgctaaac	388093	-	see also 8669 line
21382	FLJ12610	NM_024782.1	533	aggagtagtagcaacgttacttca	390648	-	-
21383	FLJ12650	NM_024522.1	327	ctgtgtgactaccctcatattga	386632	-	-
21384	FLJ12666	NM_024595.1	381	aagaatatagttgttatcagagg	387712	-	-
21385	FLJ12681	NM_022773.1	402	ctgggcatctgtctttctgtact	384094	-	-
21386	FLJ12684	NM_024534.2	1140	tggaaccttccaggtaataac	386852	-	-
21387	FLJ12700	NM_024910.1	469	aagggggaggtccctgaagactac	391975	-	-
21388	FLJ12716	NM_021942.4	3103	gagtagcaacogggcattatatt	381491	-	-
21389	FLJ12750	NM_024667.1	312	aagcacgcttgaccacagaataac	388802	-	-

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21390	FLJ12787	NM_032175.1	442	aaggcaactcgtatagatggtttgg	398501	-	see also 9086 line
21391	FLJ12788	NM_022492.1	692	aggcaactcactggatctctatagc	383487	-	-
21392	FLJ12806	NM_022831.1	246	aggcgtatagacgagctatcagata	384465	-	-
21393	FLJ12875	NM_024544.1	326	atgcgtgccttatgctgttatag	386941	-	kinase related
21394	FLJ12886	NM_019108.1	728	gtggcatcgaactctttattacc	375250	-	-
21395	FLJ12903	NM_022753.1	290	gtgagaaccctacgtctgtattc	383956	-	-
21396	FLJ12949	NM_023008.2	466	ggagacatcgtcgcaaatgtatgt	384948	-	-
21397	FLJ12973	NM_024908.1	494	cgggattgtcacccctacgaaagg	391909	-	-
21398	FLJ12975	NM_024809.2	2038	gtgttgcccgagcttctatc	390925	-	-
21399	FLJ12994	NM_022841.2	1048	cagcggactaggcaattggtaac	384562	-	-
21400	FLJ13031	NM_024688.1	1689	gagtaaacacagacacaataaaa	389281	-	-
21401	FLJ13081	NM_024834.1	1351	gtgttgccacacggaatagtaac	391261	-	-
21402	FLJ13089	NM_024953.2	294	atgcaccgaccgggagttagttac	392605	-	see also 8822 line
21403	FLJ13096	NM_025000.1	1260	gagtcagtgatgtgacatatag	392892	-	-
21404	FLJ13114	NM_024541.1	183	gtgtcgggtacgctgctattaca	386919	-	see also 8635 line
21405	FLJ13150	NM_024813.1	843	cagtttagcgtattgcaaataga	390981	-	-
21406	FLJ13188	NM_022063.1	597	tagtgaaccgtctcctaaatgaaa	381780	-	see also 8259 line
21407	FLJ13197	NM_024614.1	443	gggctggcggggagaaataactgt	387972	-	-
21408	FLJ13215	NM_025004.1	981	ctgtacctaccagaaatattatg	393093	-	-
21409	FLJ13231	NM_023073.2	1540	aggacgtgaggttctcttaaga	385107	-	-
21410	FLJ13236	NM_024902.2	1025	cagctatgtggcagaaaccttg	391884	-	-
21411	FLJ13263	NM_025125.2	349	gcgtctctaccatctgtattgc	393823	-	-
21412	FLJ13273	NM_024751.1	804	gggcgtgttagtgatgataatga	389926	-	-
21413	FLJ13291	NM_032178.1	692	ggagctgtgtaagtatgataaga	398534	-	-
21414	FLJ13310	NM_025118.1	820	tgggttgcatgcccaaaagtta	393810	-	-
21415	FLJ13330	NM_025091.2	68	aggaaacacactggaaatcgtgc	393564	-	-
21416	FLJ13352	NM_024592.1	758	atgttattctggcaatctcagg	387689	-	-
21417	FLJ13386	NM_025180.2	2173	aggacaagcgtcggatagttataa	394238	-	see also 8873 line
21418	FLJ13391	NM_032181.1	874	aggagcctgaatcgtctactatta	398544	-	-
21419	FLJ13441	NM_023924.1	655	cagataccgtgtactacaagtgg	385317	-	-
21420	FLJ13544	NM_025008.1	519	cagctcgggattgggatttgt	393109	-	-
21421	FLJ13576	NM_022484.2	1837	tggacccagacatgatacgtata	383321	-	-
21422	FLJ13611	NM_024941.1	754	tggatacacgccagtaactatc	392381	-	see also 8813 line
21423	FLJ13614	NM_139076.1	1086	ctggttagtagtaaccaagataaa	409355	-	-
21424	FLJ13615	NM_025114.1	1696	atgaatcgggagatatggttta	393765	-	-
21425	FLJ13621	NM_025009.1	951	tgcattagtagggattgagatag	393138	-	-
21426	FLJ13639	NM_024705.1	339	atgcagggtgcattgtcaataaa	389444	-	-
21427	FLJ13657	NM_024828.1	110	gggagaaacggcgcaaacgtagc	391150	-	-
21428	FLJ13710	NM_024817.1	1320	gtgttgaaacctctgaatgttc	391068	-	-
21429	FLJ13725	NM_024519.2	741	gtgttaggcgcagtcagtagaga	386579	-	-
21430	FLJ13744	NM_025011.1	532	ctgaactccggatttcattgata	393142	-	-
21431	FLJ13798	NM_024773.1	677	aaggcggacccattggttatttc	390450	-	-
21432	FLJ13840	NM_024746.2	1245	gagtcctcctggacaatccattt	389878	-	-
21433	FLJ13841	NM_024702.1	1406	gagttcgaaagtcctaatctga	389435	-	-

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21434	FLJ13868	NM_022744.1	264	tagtgctcagcccgactacttgc	383849	-	see also 8452 line
21435	FLJ13909	NM_025108.1	1369	aggagcaagtgctctaccatcc	393676	-	-
21436	FLJ13910	NM_022780.2	970	tggcctgcagcttaataaac	384180	-	see also 8471 line
21437	FLJ13912	NM_022770.2	617	aggcgagaaaggactgaatgact	384028	-	-
21438	FLJ13941	NM_024848.1	96	cagtatgtgtctacgtatacc	391417	-	-
21439	FLJ13946	NM_152275.2	530	ctgtacaaggcctgctttatcc	415287	-	-
21440	FLJ13955	NM_024759.1	936	aggcgcgtcaggcatgactact	390154	-	see also 8739 line
21441	FLJ13984	NM_024770.1	616	gtgtacaaatcggtttcaaga	390350	-	-
21442	FLJ14001	NM_024677.3	1578	ttgctgtacctgtgttcagg	389043	-	-
						signal_transduction	
						transcription_regulat	
21443	FLJ14009	NM_024760.1	1367	tgtgtcaagggtctacaacatctgg	390168	-	-
21444	FLJ14050	NM_024869.1	452	cagcaaggcttcggtgaacaaag	391583	-	-
21445	FLJ14054	NM_024563.2	635	tagtttacagaccctactataa	387317	-	-
21446	FLJ14075	NM_024894.1	1172	tggatataagactctatcaaac	391747	-	-
21447	FLJ14084	NM_021637.1	327	aagcattgtgtccctgaagtgg	380946	-	-
21448	FLJ14100	NM_025025.1	1020	gggtgcaggcgcgtttctcagg	393154	-	-
21449	FLJ14103	NM_024689.1	229	aggactttcctcggtcttgataa	389305	-	see also 8696 line
21450	FLJ14146	NM_024709.2	394	atgtcgggaaaggtcatcatcaaa	389487	-	-
21451	FLJ14166	NM_024565.4	1105	ggacacttoagcaacgtgtattga	387325	-	-
21452	FLJ14299	NM_025089.1	1322	atgcgcgacccctattgtctgg	393466	-	-
21453	FLJ14351	NM_024732.1	229	gtgtgaacctcgcatgtgttgg	389726	-	-
21454	FLJ14397	NM_032779.2	1773	tagtgagtatgtctgtttagtgg	401453	-	-
21455	FLJ14399	NM_032780.2	132	ggatttggagccacaaatagatgg	401458	-	-
21456	FLJ14464	NM_032789.1	1012	cagggtagaggagattatgacaa	401516	-	-
21457	FLJ14503	NM_152780.2	902	aagacagctactaaagcttatcc	421086	-	-
21458	FLJ14525	NM_032800.1	93	gggagcgaaagcgcttcactac	401544	-	-
21459	FLJ14564	NM_032550.1	1155	cagatgccagcgcgtttaactgc	400654	-	-
21460	FLJ14566	NM_032806.4	1769	tggacagctcggccttatatccagg	401588	-	-
21461	FLJ14594	NM_032808.2	1237	gtgcgcacgcccggattgtcc	401595	-	-
21462	FLJ14624	NM_032813.1	274	tgttgaggggccgttaactacaat	401603	-	-
21463	FLJ14639	NM_032815.2	267	cggctcgcgtcccggtgataacagc	401644	-	-
21464	FLJ14640	NM_032816.2	1117	aggtaacgttccgatttgaaa	401675	-	-
21465	FLJ14641	NM_032817.1	938	gggcctctctattatgataatcc	401679	-	-
21466	FLJ14642	NM_032818.1	324	gggtctataaccaatttgcctgc	401681	-	-
21467	FLJ14668	NM_032822.1	446	aaggaggctctcttacaattgg	401684	-	-
21468	FLJ14681	NM_032824.1	962	ttgggcctcatggtatatctct	401696	-	-
21469	FLJ14721	NM_032829.1	255	cgggtggccagcccatgcatcc	401741	-	-
21470	FLJ14775	NM_032837.1	204	aagggaatggcaacgaagaagaca	401885	-	-
21471	FLJ14803	NM_032842.1	583	tgcgcgctcagtggttataaa	401942	-	see also 9305 line
21472	FLJ14816	NM_032845.1	324	aggaatggcagagatcagatttc	401982	-	-
21473	FLJ14825	NM_032847.1	226	cagacgaacaagagatcagaag	401989	-	-
21474	FLJ14827	NM_032848.1	808	ctgttggctcccgatctgaagg	402003	-	-
21475	FLJ14834	NM_032849.2	715	aaggacgtacgcgtttctgttaa	402012	-	see also 9311 line

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21476	FLJ14871	NM_032854.1	822	acgccgaacccgtgctcattcg	402080	-	-	-
21477	FLJ14888	NM_032856.1	951	tgaacacccggagcccaagtagaac	402093	-	-	-
21478	FLJ14957	NM_032866.2	708	ctggttgacagctattggttta	402194	-	-	-
21479	FLJ14966	NM_032867.1	1426	atgagtcggagctcctaatactg	402263	-	-	-
21480	FLJ14981	NM_032868.2	457	tgggcctctgcaagtcacaaagg	402270	-	transcription_regulat	-
21481	FLJ16030	NM_198494.1	1302	cagacatcgtcatcaactaactc	438587	-	or	-
21482	FLJ20003	NM_017615.1	276	ccgcagatccgccatcagatacc	359587	-	-	-
21483	FLJ20006	NM_017618.1	900	aagagacccggcgcatttcac	359613	-	-	-
21484	FLJ20010	NM_019021.1	502	cagcgttgatgcataggagg	374506	-	-	-
21485	FLJ20013	NM_017621.2	325	aggactatggcccaaaagtcac	359659	-	-	-
21486	FLJ20032	NM_017628.2	2787	aagcagttcgagactcataatg	359708	-	-	-
21487	FLJ20045	NM_017638.1	244	ctgggggcacattcaacatg	359861	-	see also 7062 line	-
21488	FLJ20051	NM_019087.1	387	aaggatctcaaggaggtaattt	375124	-	see also 7698 line	-
21489	FLJ20054	NM_019049.1	293	aagattatggagacactgtctagt	374742	-	-	-
21490	FLJ20071	NM_017653.2	1889	aggttcgtgagttctaagtg	360298	-	see also 7082 line	-
21491	FLJ20073	NM_017654.2	3192	gtgggtacgcatactcaactct	360388	-	-	-
21492	FLJ20084	NM_017659.1	301	cagcgtctcagagacacttatct	360448	-	see also 7086 line	-
21493	FLJ20097	NM_024553.2	385	tagagggctatagagacaaatg	387178	-	see also 8641 line	-
21494	FLJ20136	NM_017684.2	2029	tggacggcggattgataatgtac	360640	-	-	-
21495	FLJ20151	NM_017689.1	3	atgacgaagcaacatgaattagg	360821	-	-	-
21496	FLJ20152	NM_019000.2	721	ggaggtatctggactgataatgg	374117	-	see also 7652 line	-
21497	FLJ20156	NM_017691.1	301	ctgcgggtctcatctgggttattc	360832	-	see also 7113 line	-
21498	FLJ20160	NM_017694.2	1611	ctgcatacggctcgtctatattt	360997	-	see also 7116 line	-
21499	FLJ20174	NM_017699.1	2324	atgggtgtttcaagatagattt	361055	-	-	-
21500	FLJ20184	NM_017700.1	544	atgggtagctgttttagcaac	361070	-	-	-
21501	FLJ20186	NM_017702.1	697	cgcctgggtcacattoagatgt	361077	-	-	-
21502	FLJ20195	NM_017706.3	160	ccgggacactccggagagacatcg	361096	-	-	-
21503	FLJ20200	NM_017708.1	1234	cggcactcagtgacattctaagg	361105	-	-	-
21504	FLJ20202	NM_017709.2	460	ctgcaaaagacctggacctaattct	361116	-	-	-
21505	FLJ20211	NM_017713.1	430	aggctaagtctgggaaactgaaa	361128	-	-	-
21506	FLJ20232	NM_019008.3	1261	agggtccctcttggactatgtga	374454	-	molecular_function	unknown
21507	FLJ20241	NM_017721.2	1135	ggagccgcgcgcgcgactacaagc	361149	-	kinase_related	-
21508	FLJ20259	NM_017730.2	1832	atgacacggggaagctcgaaatgg	361192	-	see also 7124 line	-
21509	FLJ20265	NM_017733.2	1542	cggcgttcaogtcaattgtgtgc	361239	-	-	-
21510	FLJ20272	NM_017735.2	2318	ggagctgtatgccacgtatattg	361373	-	see also 7125 line	-
21511	FLJ20274	NM_017736.1	894	aggatccgtcacagctttaactca	361403	-	-	-
21512	FLJ20275	NM_017737.1	602	ttgaccgcctacgaatggaaatc	361422	-	see also 7126 line	-
21513	FLJ20280	NM_017741.1	634	cagctaagccgaacattgagtag	361434	-	-	-
21514	FLJ20287	NM_017746.1	1754	cagatatcgtagtaagtggttat	361628	-	see also 7139 line	-
21515	FLJ20291	NM_017748.3	1359	toggatgaagcgaatatctact	361667	-	-	-
21516	FLJ20297	NM_017751.1	917	gtggcttcatcactattcttgg	361673	-	-	-
21517	FLJ20300	NM_017753.1	1219	ctgcgttcattgaacgaagtacc	361702	-	see also 7140 line	-

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21518	FLJ20303	NM_017755.4	587	gcggcctcatcataagatottag	361787	-	see also 7144 line	-
21519	FLJ20308	NM_017758.2	318	atgacgtccgggacaactataa	361889	-	-	-
21520	FLJ20309	NM_017759.2	1762	gggtgaacagtgcgctaacaag	361923	-	-	-
21521	FLJ20311	NM_017760.4	673	tggcgatccatcaagctttata	361958	-	see also 7147 line	-
21522	FLJ20313	NM_017762.1	570	aaggtatgccttgcataagctca	362033	-	-	-
21523	FLJ20315	NM_017763.1	1016	aggagctacgggtcattctcgc	362074	-	-	-
21524	FLJ20323	NM_019005.1	791	atgcctgttaactagctatatt	374381	-	see also 7656 line	-
21525	FLJ20343	NM_017775.2	805	atggccaacttagcatttatag	362198	-	-	-
21526	FLJ20345	NM_017777.1	579	gcgggaacggcgagtgtoaagg	362219	-	-	-
21527	FLJ20356	NM_018986.2	484	ccggatcgtgtgacgtttaaga	374071	-	-	-
21528	FLJ20360	NM_017782.2	704	ttgtgcttccgggtattggaagt	362235	-	-	-
21529	FLJ20364	NM_017785.2	581	gaggaaactggcgtatgtctga	362381	-	-	-
21530	FLJ20373	NM_017792.1	558	ctgctccacccacctaacaaca	362450	-	-	-
21531	FLJ20397	NM_017802.2	1578	ttggacgtctgtgacaatagt	362635	-	-	-
21532	FLJ20420	NM_017812.1	276	cagcgtattctgtgtgtatgg	362659	-	-	-
21533	FLJ20422	NM_017814.1	1089	ccgcacgaagcccgtaaatcc	362672	-	-	-
21534	FLJ20432	NM_017819.1	1147	ctgaatccttccattagataaa	362742	-	-	-
21535	FLJ20436	NM_017822.1	577	gagaagaagcgccgatacttaca	362752	-	-	-
21536	FLJ20445	NM_017824.2	797	tggcgcaaatactcgaataaact	362769	-	-	-
21537	FLJ20449	NM_017826.1	561	atggcaatgggcttgaataaat	362798	-	-	-
21538	FLJ20452	NM_017828.2	386	cagcctacgcataagattgg	362824	-	-	-
21539	FLJ20457	NM_017832.2	424	cagcacttaaccgaatatgtgt	362899	-	-	-
21540	FLJ20464	NM_017834.1	679	ctgagcgtcttcattagaagaag	362943	-	-	-
21541	FLJ20477	NM_017837.2	1222	ctgggatttccactaatataca	362958	-	-	-
21542	FLJ20487	NM_017841.1	481	gcgtgccccagacttgatgacc	363011	-	see also 7160 line	-
21543	FLJ20489	NM_017842.1	1138	tagcacgcagtgaggaaatttg	363014	-	-	-
21544	FLJ20502	NM_017845.2	122	ctgtgtaccgaagattatcacact	363021	-	-	-
21545	FLJ20507	NM_017849.1	751	atggatcccggtctctgtcacc	363126	-	-	-
21546	FLJ20508	NM_017850.1	756	ttgtacaagatatcctattgaat	363141	-	-	-
21547	FLJ20509	NM_017851.1	868	aagtacctctgtgtattcaca	363149	-	-	-
21548	FLJ20512	NM_017854.1	290	atgggtcgggaagcagcatatgg	363152	-	-	-
21549	FLJ20513	NM_017855.2	391	ctgtgttagaccacaaactatacc	363165	-	-	-
21550	FLJ20516	NM_017858.1	49	gtgattgaactaccagattatga	363167	-	see also 7162 line	-
21551	FLJ20519	NM_017860.3	350	ccggctcgtccgccattaacagg	363200	-	-	-
21552	FLJ20522	NM_017861.1	571	aagccctgatttggttcaataac	363217	-	-	-
21553	FLJ20530	NM_017864.1	592	gagacccgcatccgacattataa	363253	-	see also 7164 line	-
21554	FLJ20533	NM_017866.3	416	gagctgtattggccttaccatttc	363303	-	-	-
21555	FLJ20534	NM_017867.1	358	ctgaggttcagaccacattattac	363318	-	-	-
21556	FLJ20542	NM_017871.3	558	gtgtctaacacgggtgattataa	363331	-	-	-
21557	FLJ20546	NM_017872.2	314	gtgatggtacagcttctgttc	363343	-	-	-
21558	FLJ20555	NM_017877.2	430	gcgggggtcagtgatcatattca	363361	-	-	-
21559	FLJ20580	NM_017887.1	475	caggaggtctgtgggaattctga	363380	-	-	-
21560	FLJ20605	NM_017898.3	722	aagcgtatagttggttcaattt	363703	-	-	-
21561	FLJ20618	NM_017903.2	829	atgattcctaccacccttactact	363753	-	-	-



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21562	FLJ20625	NM_017907.1	274	gggcatggagcagcatgagtaca	363832	-	-
21563	FLJ20635	NM_017911.1	1294	acgcacacatcagctactgatg	363893	-	-
21564	FLJ20641	NM_017915.1	1677	ttgtacggcaaacatagctaaagt	363929	-	-
21565	FLJ20647	NM_017918.3	880	tagtcaactcgacagcagattatct	363942	-	-
21566	FLJ20668	NM_017923.1	89	aagatgccaaattatataacttg	364036	-	-
21567	FLJ20694	NM_017928.1	546	tggttggagccttgctgataaat	364268	-	-
21568	FLJ20699	NM_017931.1	777	atgttgcttgctgataactattg	364290	-	-
21569	FLJ20701	NM_017933.3	740	ctggaaatcgcggccattccaagt	364298	-	-
21570	FLJ20716	NM_017938.2	723	ctgtgtgggtactacgaatacatc	364364	-	see also 7179 line
21571	FLJ20718	NM_017939.1	1619	tagtaatgtcgggttagagtgga	364405	-	-
21572	FLJ20729	NM_017953.2	1067	tgtgcccggaggcgaaggtatta	364741	-	-
21573	FLJ20758	NM_017952.4	829	atgtggaagcccgagcttaga	364694	-	-
21574	FLJ20772	NM_017956.1	191	tggtttaccagcgatcacagaga	364862	-	-
21575	FLJ20811	NM_019007.2	649	cagcggccattccctcattgaaca	374426	-	-
21576	FLJ20859	NM_022734.1	344	aagacgggctaggcatctgaga	383757	-	-
21577	FLJ20896	NM_024605.2	906	gtggccgctctacaattctgtct	387812	-	see also 8665 line
21578	FLJ20898	NM_024600.1	1072	tcgggctcgtgactttctacaga	387739	-	-
21579	FLJ20972	NM_025030.1	160	aagaaggctcaactagaaattga	393162	-	-
21580	FLJ20989	NM_023080.1	714	atgaagagattaggttcaatttc	385262	-	-
21581	FLJ21062	NM_024788.2	2714	aagcactcctcccgattagtag	390723	-	-
21582	FLJ21069	NM_024692.3	918	cagttagatatcagtagagagatg	389330	-	see also 8687 line
21583	FLJ21075	NM_025031.1	163	tgggtgtgtgttcttaacttga	393166	-	-
21584	FLJ21103	NM_024556.1	552	atggagccctcgtatttaactaca	387231	-	-
21585	FLJ21106	NM_025097.1	1357	ttgtgaatccgatacttagaag	393606	-	see also 8860 line
21586	FLJ21125	NM_024627.4	1387	ctgtcggagtcagctaactctcc	388243	-	-
21587	FLJ21127	NM_024549.3	1280	gggtccggaccgccagttattt	387168	-	-
21588	FLJ21144	NM_022774.1	1229	aagtccggacagttaactatgc	384119	-	-
21589	FLJ21148	NM_024860.1	805	atggtaactggcaactgattca	391518	-	-
21590	FLJ21159	NM_024826.1	910	acgccgaatggcacaataatga	391136	-	-
21591	FLJ21168	NM_025073.1	603	aggaactcggagaattattgtcc	393491	-	-
21592	FLJ21174	NM_024863.3	379	tggagcgggacataacaacttgc	391573	-	-
21593	FLJ21308	NM_024615.2	973	ttgcgcaggtcgccaaagtattcc	387987	-	see also 8668 line
21594	FLJ21415	NM_024738.1	395	cggatgaactcggctactgttgc	389764	-	transcription_regulat
21595	FLJ21477	NM_025153.1	251	gtgggcattcgggtctgaattt	394101	-	or
21596	FLJ21511	NM_025087.1	256	tgggaccgatgatctattcttt	393516	-	see also 8859 line
21597	FLJ21603	NM_024762.1	703	gtggtccagctcattataaat	390181	-	-
21598	FLJ21610	NM_022751.1	2259	aaggtcgcctccgaaacatctcc	383943	-	-
21599	FLJ21657	NM_022483.2	383	ttgtagcactgaatctcttattt	383257	-	-
21600	FLJ21742	NM_032207.1	1744	ccgaacccatcgccaatcatgt	398692	-	see also 9098 line
21601	FLJ21749	NM_025124.1	602	tggagctctacagtgattcttca	393818	-	-
21602	FLJ21777	NM_032209.1	1062	acgcctgcacctactcgtaaatg	398703	-	-
21603	FLJ21816	NM_024675.2	487	caggagattacctatacaaga	388935	-	-
21604	FLJ21868	NM_022769.1	1124	ctggacgggacctcaacatgttaag	394020	-	-

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21605	FLJ21870	NM_023016.1	1007	tgttaagcgggaattcattacc	385044	-	-	-
21606	FLJ21901	NM_024622.2	2017	tgtccattcagcgtattgaact	388184	-	-	-
21607	FLJ21908	NM_024604.1	524	atggatccgatccataataatcc	387761	-	see also 8664 line	-
21608	FLJ21919	NM_023015.3	1294	tgttcgggactctgtaagactac	384995	-	see also 8538 line	-
21609	FLJ21940	NM_022828.2	1062	tgggtatctcttgatcacattga	384358	-	-	-
21610	FLJ21941	NM_025040.2	634	aagagcgtgcagcaatgcaatgg	393170	-	-	-
21611	FLJ21945	NM_025203.1	822	gtgaagtacgtctatgtgataaa	394372	-	-	-
21612	FLJ21986	NM_024913.3	687	tggcgaaggccatactctaca	392012	-	-	-
21613	FLJ22021	NM_024535.1	1320	acgaagcgaaggcttctctcc	386895	-	-	-
21614	FLJ22054	NM_018527.2	640	aggttaaccgagagacaagatacc	372125	-	see also 7506 line	-
21615	FLJ22104	NM_022918.2	1344	aggttgatccagatacacaaac	384925	-	see also 8536 line	-
21616	FLJ22160	NM_024585.2	593	aggaggtgtccacatcatca	387602	-	-	-
21617	FLJ22169	NM_024085.2	136	tagagccctctatagtattca	385784	-	-	-
21618	FLJ22170	NM_025099.1	697	aggatgttcattctgcatact	393618	-	-	-
21619	FLJ22175	NM_025161.2	2451	cagtggctcttctgagaatgc	394194	-	-	-
21620	FLJ22202	NM_024883.1	140	atggccgttgagagatatgctgg	391650	-	-	-
21621	FLJ22246	NM_025232.2	557	atgtcgttgatgatgtactgg	394488	-	-	-
21622	FLJ22269	NM_032219.2	634	cgttaagtctcgtgtctatcc	398706	-	-	-
21623	FLJ22301	NM_024836.1	941	cggccctctgacctacactgg	391350	-	-	-
21624	FLJ22318	NM_022782.3	1135	gggttaaccgattgagattgaact	384001	-	see also 8457 line	-
21625	FLJ22341	NM_024599.2	2220	aggtccagatcagttctacagg	387734	-	-	-
21626	FLJ22344	NM_024717.2	832	ggcgcctctactcgtgaattcc	389517	-	-	-
21627	FLJ22353	NM_024581.1	792	cgtgactacctactactaca	387611	-	-	-
21628	FLJ22374	NM_032222.1	566	cagacggtcccgggtgaactcc	398720	-	-	-
21629	FLJ22378	NM_025078.3	370	gtggcagagcccatcatgatcc	393505	-	-	-
21630	FLJ22386	NM_024589.1	866	acgacgcccgtgtctacttccac	387617	-	see also 8656 line	-
21631	FLJ22390	NM_022746.2	581	ccgagacgctctcatcaaatagc	383876	-	-	-
21632	FLJ22457	NM_024901.3	867	ctggactccaccctagaacatgt	391861	-	-	-
21633	FLJ22471	NM_025140.1	908	aggtccactcatcaaaagagagg	393954	-	-	-
21634	FLJ22490	NM_024790.2	735	ggggcttacggtgagacatcc	390744	-	-	-
21635	FLJ22531	NM_024650.2	830	tgtgtgactcccgagcattatgt	388523	-	-	-
21636	FLJ22555	NM_024520.1	682	ctgggttaggactcgaattaagg	386611	-	-	-
21637	FLJ22557	NM_024713.1	828	aggtgtgtgtcagaactatc	389502	-	-	-
21638	FLJ22573	NM_024660.1	287	atgaccacggcggatttcgtaacg	388702	-	-	-
21639	FLJ22609	NM_022072.2	886	ggggatacttgtatctctaca	382157	-	see also 8265 line	-
21640	FLJ22624	NM_024808.2	368	aggtcattctcgaatagataaag	390844	-	see also 8748 line	-
21641	FLJ22635	NM_025092.1	387	tggagcccttgaggaatgtct	393568	-	-	-
21642	FLJ22649	NM_021928.1	555	tggacgtctgatacaaatgtctgg	381277	-	-	-
21643	FLJ22662	NM_024829.1	599	gggacattgtctcgtcttaca	391185	-	-	-
21644	FLJ22684	NM_025048.1	273	agggccagtcgagaataatcagc	393242	-	-	-
21645	FLJ22688	NM_025129.3	1086	ggcctctctcgaataacttctata	393827	-	-	-
21646	FLJ22692	NM_025049.1	797	caggggagacctgttaacttgc	393254	-	-	-
21647	FLJ22709	NM_024578.1	773	cagcggagggtccgtgtactct	387440	-	-	-
21648	FLJ22729	NM_024683.1	811	aggtgtgagcatgaatcgaat	389139	-	-	-

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21649	FLJ22746	NM_024785.2	366	ggcgccgctctggaatactgt	390654	-	-
21650	FLJ22757	NM_024898.1	1895	aagatggcaaacacagcagataaga	391781	-	-
21651	FLJ22789	NM_032230.1	1627	aagtataagctcgaatgaatga	398900	-	-
21652	FLJ22794	NM_022074.2	1285	gtgactcagttgggtactattc	382191	-	-
21653	FLJ22833	NM_022837.1	485	taggtctcaagaccaccactattt	384526	-	see also 8490 line
21654	FLJ22875	NM_032231.3	363	aagaagaatattcgtttatttc	398913	-	see also 9127 line
21655	FLJ22938	NM_024676.2	1020	cagagatgacattcaattccatc	389008	-	-
21656	FLJ22944	NM_025145.3	1978	aagaacataccgggtatatcat	394027	-	-
21657	FLJ22965	NM_022101.2	203	cgggaccggtcccggtgtgtga	382288	-	-
21658	FLJ23018	NM_024810.1	833	cagcggctaatacagctattagt	390942	-	-
21659	FLJ23047	NM_024548.2	262	ctgacgttgctctgtgtattaaa	387080	-	see also 8640 line
21660	FLJ23056	NM_024582.1	83	aggacaagcagttgacttaacc	387560	-	-
21661	FLJ23058	NM_024696.1	388	ctgaatcatattccaacctatat	389382	-	-
21662	FLJ23059	NM_032234.2	1312	togttacacgggactgttagta	398997	-	-
21663	FLJ23091	NM_024911.3	741	gaggccggttactatgaatgga	391989	-	see also 8804 line
21664	FLJ23129	NM_024763.2	1019	ctgtggttgagtcgaagtagtaa	390211	-	-
21665	FLJ23151	NM_024772.2	2329	atgatagcaccactaattgaag	390420	-	-
21666	FLJ23186	NM_024616.1	255	gtgatcatcaggtactgtctct	388054	-	-
21667	FLJ23191	NM_024574.2	2076	ggggcactctgtaaagtcaga	387433	-	-
21668	FLJ23221	NM_024579.1	246	ggagactaccattagtttgaac	387452	-	-
21669	FLJ23231	NM_025079.1	1058	tggatacaagtcggactttcc	393508	-	-
21670	FLJ23235	NM_024943.1	671	tggataccccaatgattgata	392405	-	-
21671	FLJ23259	NM_024727.1	1400	ggagtaactggagctggatttag	389717	-	-
21672	FLJ23263	NM_025115.1	1025	aggagacttctggatgactag	393781	-	see also 8865 line
21673	FLJ23306	NM_024530.1	778	ctgccacctctgggtaagttgc	386781	-	-
21674	FLJ23311	NM_024680.2	1357	gtgtcaacgcctcagatagtag	389078	-	transcription_regulat
21675	FLJ23342	NM_024631.1	841	aagaggatatcgtgtaccattat	388303	-	or, cell_cycle
21676	FLJ23403	NM_022088.1	825	gggacacccgggtctatgcaatt	382033	-	see also 8673 line
21677	FLJ23451	NM_024766.1	205	atgattcctcgcacatgtatct	390284	-	see also 8262 line
21678	FLJ23467	NM_024575.1	525	ccgcattccggcccggtttgac	387435	-	-
21679	FLJ23471	NM_024723.1	195	gggtacccgcgcagtgatattct	389559	-	-
21680	FLJ23476	NM_024640.2	640	cagttctcgttgatttagtag	388428	-	-
21681	FLJ23514	NM_021827.1	1109	ggggcgggattgcaaatgcttc	381207	-	-
21682	FLJ23518	NM_024725.2	789	atgacagcgatatctcagttaga	389594	-	-
21683	FLJ25063.1	697	ttgaacggtgtcagaacgatatt	393411	-	-	-
21684	FLJ23560	NM_024685.2	502	atggcaccagtcctaaagtagaca	389154	-	-
21685	FLJ23584	NM_024588.2	718	aggggacagccctcaagaagagc	387615	-	-
21686	FLJ23594	NM_024781.1	708	cagacaataccaggcaaatattg	390634	-	-
21687	FLJ23654	NM_152550.1	1273	gtggacaggtcagcactatca	417992	-	see also 9880 line
21688	FLJ23657	NM_178497.2	359	ccgttaccttacttaggtatt	430895	-	-
21689	FLJ23703	NM_182534.1	83	ttgtaacatcggggcatttctcc	434210	-	-
21690	FLJ23825	NM_173620.1	1067	ttgcttacgcggaggatttga	426589	-	-
21691	FLJ23878	NM_144990.1	503	gggaaggacctgtattgagtag	412464	-	-

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21692	FLJ25045	NM_178537.3	2102	acgaccgcgcgatcaacggttcg	431141	-	-	-	-
21693	FLJ25056	NM_182530.1	236	acgatagtgccctctatact	434181	-	-	-	-
21694	FLJ25067	NM_152504.2	156	gtgtgacataagagattacgtcc	417285	-	-	-	-
21695	FLJ25102	NM_182826.1	729	cagggtggaccaccattctcaga	434771	-	-	-	-
21696	FLJ25124	NM_144698.2	232	tgccagctcccccgttcctcgg	411465	-	-	-	-
21697	FLJ25143	NM_182500.1	556	tgccagtttctgaaagactatga	433969	-	-	-	-
21698	FLJ25161	NM_182522.2	508	ctgtcgcaactggctcttttagc	434149	-	-	see also 10267 line	-
21699	FLJ25168	NM_152466.1	473	tggtttatcagggctcacatact	416981	-	-	-	-
21700	FLJ25224	NM_182495.2	762	ctgtgtgagccctcaacatagc	433918	-	-	-	-
21701	FLJ25286	NM_152546.1	598	ttggcgaagaaccacaatacataa	417890	-	-	see also 9879 line	-
21702	FLJ25323	NM_198521.1	164	cagaatcccttgctctattcc	439083	-	-	-	-
21703	FLJ25328	NM_152483.1	780	tgagacagctgggaacttcaact	417053	-	-	-	-
21704	FLJ25333	NM_152548.1	903	gggattatccgcacgaatgaac	417924	-	-	-	-
21705	FLJ25351	NM_152525.3	529	aagttcgatgaagtgaagtattt	417626	-	-	-	-
21706	FLJ25359	NM_144587.1	1414	aggagaatacaactattcgaaa	410054	-	-	-	-
21707	FLJ25371	NM_152543.1	555	ttgttaggcagtgtaagtcatca	417855	-	-	-	-
21708	FLJ25378	NM_152768.1	460	gagctgcccgggaagacatctacc	420892	-	-	-	-
21709	FLJ25393	NM_181645.1	799	gagttacagtcacgtgatgctc	432668	-	-	-	-
21710	FLJ25409	NM_144652.1	1069	aagcccaagccgattgagatacc	410856	-	-	-	-
21711	FLJ25414	NM_152343.1	157	gagatgcgagatgacttaagtoa	415722	-	-	-	-
21712	FLJ25416	NM_145018.2	1908	gagagtgaccattctagtctaaa	412719	-	-	-	-
21713	FLJ25421	NM_152512.3	1919	acgtgcgacgtcagattacatg	417382	-	-	-	-
21714	FLJ25422	NM_145000.2	697	aagcgtgtacggtcttctctttt	412548	-	-	-	-
21715	FLJ25429	NM_152376.2	253	tgagcgtgtgcgtctcatcata	415964	-	-	-	-
21716	FLJ25436	NM_144581.1	876	cogaattgcctcacagatcaca	409951	-	-	-	-
21717	FLJ25444	NM_152761.1	1098	aagcaccagctacggattgtttc	420805	-	-	-	-
21718	FLJ25476	NM_152493.2	843	aagacgtacaggtgaaggtatg	417104	-	-	-	-
21719	FLJ25477	NM_152704.2	1388	gaggtggacgacacctatctaca	419904	-	-	-	-
21720	FLJ25530	NM_152722.3	463	ctgtagatgtgccatttcgagg	420084	-	-	see also 9931 line	-
21721	FLJ25534	NM_153234.3	579	cagttgtgggacctacactaca	422431	-	-	-	-
21722	FLJ25555	NM_152345.3	1399	tggtctccagtgtaagattgaaa	415740	-	-	-	-
21723	FLJ25621	NM_198514.1	344	gagaacaacaaccattagtcc	438889	-	-	see also 10334 line	-
21724	FLJ25660	NM_152481.1	380	atgtcacaccctgcataataaca	417034	-	-	-	-
21725	FLJ25694	NM_173604.1	821	cggacccctgcgatagtaaatc	426480	-	-	-	-
21726	FLJ25735	NM_152577.1	570	caggaccatcatcagctatttc	418186	-	-	-	-
21727	FLJ25736	NM_152578.1	740	caggttgtaacagggttggaaga	418230	-	-	-	-
21728	FLJ25770	NM_178555.2	1576	cagttctcgcccaatagaaacaac	431261	-	-	see also 10196 line	-
21729	FLJ25773	NM_182560.1	734	ttgtctacaccagaagattaagc	434451	-	-	-	-
21730	FLJ25791	NM_173559.1	684	gggaaccgatacttctactagt	426079	-	-	-	-
21731	FLJ25801	NM_173553.1	1013	gcgaacacggcgagatcatc	426003	-	-	-	-
21732	FLJ25851	NM_174927.1	405	atggagccactctgtatcttcc	428717	-	-	-	-
21733	FLJ25954	NM_173572.1	729	ctgttatggttgttgtgaatta	426275	-	-	-	-
21734	FLJ25955	NM_178821.1	104	cgttatcccgccaggaattat	431367	-	-	-	-
21735	FLJ25972	NM_178822.3	2751	aagtagaccaccaataacagtaa	431499	-	-	receptor_activity	-

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21736	FLJ25976	NM_174943.2	664	gagaacatgatcttaaccatact	428771	-	-	-	-
21737	FLJ25989	NM_198512.1	152	ttgcaatggatccagctctatat	438858	-	-	-	-
21738	FLJ26016	NM_198472.1	101	tcgttctgcggactgaacttc	438404	-	-	-	-
21739	FLJ30046	NM_144595.2	657	ccggtcaccctgcgaaatagta	410119	-	-	-	-
21740	FLJ30213	NM_145008.1	602	atggcggagccactctgtttaac	412590	-	-	transcription_regulat	-
21741	FLJ30277	NM_153008.3	967	ctgttgcataggcaattatttat	421814	-	-	or	-
21742	FLJ30294	NM_144632.2	149	gagactaatatcgctatctct	410593	-	-	-	-
21743	FLJ30373	NM_152479.1	223	ctgctatcgagagaagaagttcc	417017	-	-	-	-
21744	FLJ30430	NM_153009.1	441	ccggctgtcaaggccgtttatca	421818	-	-	-	-
21745	FLJ30469	NM_182573.1	333	ggcgctgcacaaactgacaaatgc	434483	-	-	kinase_related,	-
21746	FLJ30507	NM_153010.3	475	cagcgtctcttcaaggatttc	421821	-	-	receptor_activity	-
21747	FLJ30525	NM_144584.1	485	gagcggcgaattcagtttaacc	409977	-	-	-	-
21748	FLJ30634	NM_153014.1	796	tgggttaaggatgaagttaag	421856	-	-	-	-
21749	FLJ30655	NM_144643.1	1616	ttgtacaagatgctaccataaga	410667	-	-	-	-
21750	FLJ30668	NM_153015.1	877	gagctctatgtogaaacagatt	421878	-	-	-	-
21751	FLJ30672	NM_153016.2	479	aagcttggcagcttacacatgg	421883	-	-	-	-
21752	FLJ30794	NM_152527.1	1187	cagcgtgcttcaggaattataga	417683	-	-	-	-
21753	FLJ30834	NM_152339.1	550	acggggcagccagcttcaaatcc	416272	-	-	-	-
21754	FLJ30851	NM_198553.1	616	aagaccagatgggtctgtct	439475	-	-	see also 10339 line	-
21755	FLJ30973	NM_152451.1	440	aagcgaatgtatggagactatga	416918	-	-	-	-
21756	FLJ30990	NM_152517.1	1739	atgcttctgtatgtgtattca	417461	-	-	-	-
21757	FLJ31031	NM_182533.1	550	cagaagacgtgacgtgtttca	434207	-	-	-	-
21758	FLJ31051	NM_153687.1	678	ttggaagatagcacacactaagaa	423512	-	-	-	-
21759	FLJ31052	NM_152378.1	509	aggcgaogctctctattcttag	415985	-	-	-	-
21760	FLJ31153	NM_144600.1	484	aagtactaacattgaagatcttc	410218	-	-	-	-
21761	FLJ31164	NM_145003.1	213	atgttgaccgagatggaatcc	412579	-	-	-	-
21762	FLJ31166	NM_153022.1	755	gtgaccgtcattgctttogatca	421886	-	-	-	-
21763	FLJ31265	NM_152395.1	361	tgtgcgagtgccctgtatacc	416255	-	-	-	-
21764	FLJ31338	NM_152469.1	1135	tggactgtgcaggcatctgttct	416997	-	-	-	-
21765	FLJ31340	NM_152748.2	1634	caggaccattgggttgctatag	420478	-	-	see also 9942 line	-
21766	FLJ31434	NM_152496.1	804	gaggcccgagatcggttcattca	417135	-	-	-	-
21767	FLJ31438	NM_152385.1	521	aaggtaataagagcatatcactgc	416069	-	-	-	-
21768	FLJ31461	NM_152454.1	209	ttgtgatcttggctacatcaatt	416955	-	-	-	-
21769	FLJ31528	NM_144679.1	112	gtgtccgggtactgtttgaag	411284	-	-	-	-
21770	FLJ31564	NM_144720.1	1802	cagaaacgtgtccgaaacatcc	411784	-	-	see also 9739 line	-
21771	FLJ31568	NM_152509.1	873	ctgtctacagctctacagatga	417317	-	-	-	-
21772	FLJ31606	NM_153025.1	46	aagaaggagatccacctatcagt	421890	-	-	-	-
21773	FLJ31737	NM_144984.1	196	ctggccgtgcctgtgttttgc	412434	-	-	-	-
21774	FLJ31751	NM_152652.1	225	ttgctcagatcatgaagtaggg	419511	-	-	-	-
21775	FLJ31795	NM_144609.1	112	gtggaccgagccgtttataggagc	410283	-	-	-	-
21776	FLJ31810	NM_152570.1	651	atgcttcacacggccatcatcg	418112	-	-	see also 9884 line	-
21777	FLJ31818	NM_152556.1	398	gaggccgaaggctgattgaatg	418075	-	-	see also 9881 line	-

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21778	FLJ31842	NM_152487.1	713	aagctatggttatcaatgaata	417074	-	see also 9878 line	-
21779	FLJ31846	NM_144974.1	792	gggaaccgaataacacagaagta	412165	-	-	-
21780	FLJ31951	NM_144726.1	1672	tggttaaccattgctacgaaga	411850	-	receptor_activity	-
21781	FLJ31952	NM_144682.2	1243	aagagtggtatggctatctgt	411295	-	-	-
21782	FLJ32000	NM_152498.1	409	aagcgaaagtcttctaattt	417166	-	kinase related	-
21783	FLJ32001	NM_152609.1	851	cagctagaacagctgataatga	418774	-	see also 9899 line	-
21784	FLJ32011	NM_182516.1	572	ggggtccaaagccctgactatga	434053	-	-	-
21785	FLJ32028	NM_152680.1	452	cagagtgctttacagacatatga	419693	-	-	-
21786	FLJ32063	NM_153031.1	779	caggtaatggcttcattctt	421979	-	-	-
21787	FLJ32110	NM_181646.2	1082	cggtcacacatgccaaatcgaca	432685	-	-	-
21788	FLJ32112	NM_153035.1	276	aagcaggccacgattgaatctct	421994	-	transcription_regulat	-
21789	FLJ32206	NM_152497.1	855	aagacctctccgcatagattct	417145	-	or	-
21790	FLJ32252	NM_182510.1	1131	ggggtgctgccttaaacctgc	434032	-	-	-
21791	FLJ32312	NM_144709.1	1449	gcgagctgcgtcattcaactca	411549	-	-	-
21792	FLJ32334	NM_144565.1	220	tcgggtgagccagcttatca	409679	-	-	-
21793	FLJ32343	NM_152434.1	437	aggacattgtagccgaaagatat	416770	-	-	-
21794	FLJ32363	NM_198566.1	2053	gtggtatcctaaaccagattctt	439663	-	see also 10343 line	-
21795	FLJ32384	NM_144608.1	614	cgaggctcggcgaagagattgct	410280	-	-	-
21796	FLJ32416	NM_144616.2	394	ggagacctgctcctcaacaagtc	410342	-	-	-
21797	FLJ32421	NM_144695.1	638	aagcaagttacgatattcaaa	411347	-	-	-
21798	FLJ32440	NM_173685.1	438	ttgatatggcaactaaaccatta	427402	-	see also 10110 line	-
21799	FLJ32447	NM_153038.1	535	cagccaactaaacggagtaaacg	422027	-	-	-
21800	FLJ32549	NM_152440.1	1128	atgacgggaccacacatctgattct	416829	-	see also 9866 line	-
21801	FLJ32642	NM_152415.1	397	cagtatgccgaataacagaagaag	416445	-	-	-
21802	FLJ32670	NM_144612.3	1387	tggtctctacggcgaagtctaca	410320	-	-	-
21803	FLJ32675	NM_173811.2	540	gcgtctatgagctgtgtgttc	428228	-	-	-
21804	FLJ32682	NM_182542.1	1055	tggtctcgggaagagcatgttaac	434294	-	-	-
21805	FLJ32702	NM_152337.1	332	cagtgacattacgcttgaacaag	415702	-	-	-
21806	FLJ32734	NM_144681.1	736	aggtgattgcagctacagaagc	411288	-	-	-
21807	FLJ32742	NM_152580.1	370	ttggttcccaatctctttgtaaa	418246	-	-	-
21808	FLJ32743	NM_145020.2	855	aggcagcctgtgggaagtaac	412770	-	-	-
21809	FLJ32745	NM_144978.1	1657	caggctgttcagtaataatga	412255	-	-	-
21810	FLJ32762	NM_145023.3	1789	atgcaagtgggttaagtaagaac	412836	-	-	-
21811	FLJ32771	NM_145017.1	146	gggggtcgtccctctattgta	412666	-	-	-
21812	FLJ32779	NM_173521.1	1183	cagctaataactactacatgatg	425420	-	-	-
21813	FLJ32783	NM_144968.1	568	gggtcccaacctatcttagtta	412005	-	-	-
21814	FLJ32784	NM_144623.1	1121	cagacagctgtggagaagattc	410444	-	-	-
21815	FLJ32785	NM_152494.1	399	ctgtgcagcctcctactagtac	417109	-	-	-
21816	FLJ32786	NM_144648.1	91	tggaagcccgatcgcttactgttc	410728	-	kinase related	-
21817	FLJ32796	NM_153606.1	508	ggggaggtacatatattcaagt	423292	-	-	-
21818	FLJ32800	NM_152647.1	1400	aagtcgactatagtagctgg	419494	-	-	-
21819	FLJ32825	NM_152492.1	660	ggagcatctgcgagctcgattact	417087	-	-	-
21820	FLJ32827	NM_173081.1	1608	ggagctgacggccaatgaattatg	424665	-	-	-

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21821	FLJ32830	NM_152781.1	771	ctgggttgctgaataagcatgt	421110	-	-	-
21822	FLJ32831	NM_153040.1	538	gggaaagggtccacctaattagg	422033	-	-	-
21823	FLJ32844	NM_173543.1	1210	aagcagaactctacactagaaga	425756	-	-	-
21824	FLJ32855	NM_182791.1	169	aaggagagaacccgcatctagg	435289	-	-	-
21825	FLJ32859	NM_152539.1	473	cagactgaacagaagattactac	417775	-	kinase_related	-
21826	FLJ32880	NM_152762.1	1105	atgcctcgggatacagtaaac	420822	-	-	-
21827	FLJ32884	NM_144702.1	1482	tcgcaacgggcagatcagatg	411488	-	-	-
21828	FLJ32915	NM_145014.1	868	atgagtcgattatcagtgatca	412630	-	-	-
21829	FLJ32926	NM_144577.1	1273	gggagagcacagcgtcgtattcg	409908	-	-	-
21830	FLJ32934	NM_144622.1	1568	cagcaactggctacatagtcattg	410430	-	-	-
21831	FLJ32940	NM_144896.2	2032	ttgagctagatgcgattgaact	411437	-	-	-
21832	FLJ32942	NM_144594.1	225	aggtctcctgagctgaaattagt	410104	-	-	-
21833	FLJ32949	NM_173812.3	273	gaggatcaaaagctgaagagc	428241	-	-	-
21834	FLJ32954	NM_144713.1	1303	tggcgatttgcgtgctattgg	411658	-	-	-
21835	FLJ32955	NM_153041.1	340	aagttgcatactatatacatc	422048	-	-	-
21836	FLJ32965	NM_182506.1	1243	gtgcaoghtccaaggttaagtc	434012	-	-	-
21837	FLJ33008	NM_152449.2	1011	tggtagaacccctaatagttga	416889	-	-	-
21838	FLJ33069	NM_144649.1	251	ctgtgattccctggatggtacc	410813	-	see also 9725 line	-
21839	FLJ33084	NM_152500.1	1821	tggtaacggccagcctttattg	417229	-	-	-
21840	FLJ33167	NM_152683.1	935	aggaagaactggacatgaattca	419766	-	-	-
21841	FLJ33207	NM_178554.2	472	gggactgatctagcctgaaatcc	431210	-	-	-
21842	FLJ33215	NM_148894.1	1391	aggaagttgaogctgtatagc	415149	-	-	-
21843	FLJ33298	NM_173636.1	1248	gggatgtcaaggacatcaataga	426928	-	-	-
21844	FLJ33387	NM_182526.1	367	gagcgtgtggccctctctcatc	434167	-	-	-
21845	FLJ33496	NM_182587.1	837	cggacctgtgaatcacaacatca	434540	-	-	-
21846	FLJ33516	NM_152423.2	1832	ttgactgtgtgcatctactaatt	416578	-	-	-
21847	FLJ33534	NM_182586.1	398	tggatggccagccgaatgcatta	434526	-	-	-
21848	FLJ33590	NM_173821.1	1522	ctgcttctccaaaggctattacc	428336	-	-	-
21849	FLJ33600	NM_198478.1	973	gagccggcagaccctgtgtacc	438452	-	-	-
21850	FLJ33620	NM_178824.3	1729	gaggaccgaataaagttccttaga	431761	-	-	-
21851	FLJ33641	NM_152887.1	604	aggcatgaaatctcagttgaac	419808	-	-	-
21852	FLJ33651	NM_182590.1	107	ggcgagaactccctcaacatcc	434557	-	-	-
21853	FLJ33706	NM_182584.1	677	aagttgctgcacctttaattag	434518	-	-	-
21854	FLJ33708	NM_173675.1	300	caggatgatgtctctgttcttt	427313	-	-	-
21855	FLJ33710	NM_198480.1	626	aagatctactcagtatatacatc	438466	-	-	-
21856	FLJ33718	NM_173660.2	1079	ctggcagccactcctctactcc	427140	-	-	-
21857	FLJ33761	NM_153211.1	1074	acgactagagtgtaatacaaca	422167	-	see also 9976 line	-
21858	FLJ33768	NM_173610.1	328	atgaaggagggttactaacattt	426499	-	-	-
21859	FLJ33790	NM_173583.1	465	gggtacactcgtcagaaatcg	426299	-	-	-
21860	FLJ33810	NM_182558.1	542	gggtggacagcggcttaattg	434448	-	-	-
21861	FLJ33814	NM_173510.1	437	ttgtgcacatcaggatgtagagg	425232	-	see also 10077 line	-
21862	FLJ33817	NM_152348.1	717	cagaagaatctctctgtatcacgc	415756	-	-	-
21863	FLJ33860	NM_173644.1	373	aagtgtaaacacttcaacaaca	426940	-	-	-
21864	FLJ33915	NM_182613.1	1565	cagcgacctcaacaatacatatg	434682	-	-	-